PSYCHOLOGICAL DISTRESS, SLEEP DISRUPTION AND BODY IMAGE AMONG WOMEN WITH POLYCYSTIC OVARY SYNDROME AND WITHOUT POLYCYSTIC OVARY SYNDROME

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ABSTRACT

The study entitled as psychological distress, sleep disruption and body image among women with polycystic ovarian disease and without polycystic ovarian disease. The main Purpose of the study was to find how these variables differed in both groups of women. The research design used was general descriptive design. 100 women volunteered as participants in this study. Among these 50 were women with pcod and 50 without pcod were used to conduct the study. The data were analysed using descriptive statistics, t-test analysis. There is significant difference in psychological distress, sleep disruption and body image among women with pcod and without pcod. There is a positive correlation between psychological distress, sleep disruption and body image body image women with pcod. Also, there is a positive correlation between sleep disruption and body image among women with pcod. There is positive correlation between psychological distress and body image among women without pcod and there is a negative correlation between psychological distress and sleep disruption among women with pcod

Key terms: Psychological distress, Sleep disruption, Body image, women with and without pcod.

CHAPTER 1

PSYCHOLOGICAL DISTRESS, BODY IMAGE AND SLEEP DISRUPTION AMONG POLYCYSTIC OVARIAN DISEASE WOMEN AND NON-POLYCYSTIC OVARIAN DISEASE WOMEN

Polycystic ovary/ovarian syndrome (PCOS) is a set of symptoms related to an imbalance of hormones that can affect women and girls of reproductive age. It is a serious and frequent endocrine disorder in women and diagnosed by a combination of signs and symptoms of androgen excess, ovarian dysfunction, and polycystic ovarian morphology on ultrasound (Journal of Psychosomatic Obstetrics &Gynaecology, 2019)

PCOS was first recognized as a clinical entity in the 1930s. At that time it was named Stein–Leventhal syndrome, after the two clinicians who first reported the disorder in seven women who presented with hirsutism, amenorrhea and enlarged bilateral polycystic ovaries, along with obesity. Once considered a reproductive disorder acquired by adult women, it is now widely accepted that PCOS is a lifelong metabolic condition. (Journal of Psychosomatic Obstetrics &Gynaecology 2019)

Features of the syndrome classically emerge during puberty, but diagnosis can be difficult because irregular menstruation is common in normal development. Excess body hair accumulates gradually, reflecting increasing duration of androgen exposure. Some girls (and women) with PCOS have severe acne vulgaris (predominantly on the lower face, neck, chest and upper. (Journal of Psychosomatic Obstetrics &Gynaecology 2019)

Polycystic ovary syndrome (PCOS) is a complex condition characterized by elevated androgen levels, menstrual irregularities, and/or small cysts on one or both ovaries. The disorder can be morphological (polycystic ovaries) or predominantly biochemical (hyperandrogenaemia). Hyperandrogenaemia, a clinical hallmark of PCOS, can cause inhibition of follicular development, microcysts in the ovaries, anovulation, and menstrual changes. (Zangeneh et.al 2012)

PCOS can be described as an oligogenic disorder in which the interaction of a number of genetic and environmental factors determines the heterogeneous, clinical, and biochemical phenotype. Although the genetic ethology of PCOS remains unknown, a family history of PCOS is relatively common; however, familial links to PCOS are unclear. A lack of phenotypic information prevents a formal segregation analysis. Nonetheless, the current literature suggests that the clustering of PCOS in families resembles an autosomal dominant pattern. (Ndefo, Eaton and Green,2013)

Environmental factors implicated in PCOS (e.g., obesity) can be exacerbated by poor dietary choices and physical inactivity; infectious agents and toxins may also play a role. The reproductive and metabolic features of PCOS are sometimes reversible with lifestyle modifications such as weight loss and exercise. (Ndefo, Eaton and Green,2013)

PCOD is a hormonal disorder with a potential to lead to various diseases. It also continues to be a common cause of infertility among women. Although signs and symptoms vary, the three most common factors associated with PCOS include ovulation irregularities, increased androgen levels, and cystic ovaries. Problems with ovulation and elevated androgen levels occur in the majority of women with PCOS. Moreover, hirsutism, acne, and alopecia are directly associated with elevated androgen levels, and the prevalence of polycystic ovaries on pelvic ultrasound exceeds 70% in patients with PCOS. (Ndefo, Eaton and Green,2013)

PCOD is a heterogeneous disorder that affects at least 7% of adult women. According to the National Institutes of Health Office of Disease Prevention, PCOS affects approximately 5 million women of childbearing age in the U.S. Costs to the U.S. health care system for the identification and management of PCOS are approximately $4 billion per year. (Ndefo, Eaton and Green,2013)

Research suggests that 5% to 10% of females 18 to 44 years of age are affected by PCOS, making it the most common endocrine abnormality among women of reproductive age in the U.S. Women seeking help from health care professionals to resolve issues of obesity, acne, amenorrhea, excessive hair growth, and infertility often receive a diagnosis of PCOS. Women with PCOS have higher rates of endometrial cancer, cardiovascular disease, dyslipidaemia, and type-2 diabetes mellitus. This article explores the pharmacotherapeutic management of PCOS (Journal of the endocrine society,2019)

Polycystic ovary syndrome (PCOS) is of clinical and public health importance as it is very common, affecting up to one in five women of reproductive age. PCOS has significant and diverse clinical implications including reproductive (infertility, hyperandrogenism, hirsutism), metabolic (insulin resistance, impaired glucose tolerance, type 2 diabetes mellitus, adverse cardiovascular risk profiles) and psychological features (increased anxiety, depression and worsened quality of life). Polycystic ovary syndrome is a heterogeneous condition and, as such, clinical and research agendas are broad enough to involve many disciplines (Kahn,2008)

Hirsutism, menstrual irregularity and infertility have been shown to be the most distressing symptoms in adults with PCOS, whereas weight difficulties have been identified as the most distressing symptom in adolescents and young women with the disease . It has been proposed that women with PCOS might be at an increased risk for eating disorders given the propensity for obesity in PCOS. Obesity and, specifically, central obesity, is a common feature of PCOS that worsens the phenotype. (Kahn,2008)

Women with PCOS have clinical and/or biochemical signs of hyperandrogenism. Several studies have shown a correlation between depression and hirsutism. Women with PCOS have a lower self-esteem, a more negative self-image, and have higher levels of depression and psychological distress owing to the physical appearance characteristics of hyper-androgenism, including obesity, hirsutism, cystic acne, seborrhoea and hair loss, possibly by influencing feminine identity. PCOS may not only be coinduced by psychosocial factors, its main symptoms such as infertility, menstrual dysfunctions, hirsutism and obesity

can be caused by increased psychosocial stress and mood disorders. Barry et al. showed that patients with PCOS were significantly more neurotic (had difficulty coping with stress), anxious and depressed than the controls. (Stephanie Watson 2021).

Psychological distress is a state that involves discomfort and unpleasant feelings that affect daily life activities of a person. It is a general term used to describe unpleasant feelings or emotions that impact a person's level of functioning. (Williams,2021)

Barry et al. Showed that patient's with pcod have significantly higher level of psychological distress than controls. It has been suggested that women with PCOD have a lower self esteem, more negative self destructive feelings and cognitions and higher level of psychological distress owing to their condition.

PCOD is closely associated with psychological distress with important implications that necessitate diagnosis and treatment of the disorders. Findings suggest that treatment of PCOD should tackle physical and psychological complaints. This is because psychological distress reduces motivation, and it enhances the dietary management and medication on PCODs. (Zangeneh et al.2012)

Body image is the way a person thinks or feels about their body. It can be influenced by many factors, including a person's understanding of their health, their attitudes towards physical appearance, their physical fitness, body size and their personal or cultural values. The physical changes of PCOS can affect body image. Many of the symptoms of PCOS challenge our ideas about femininity and how women are 'supposed' to look. Many women with PCOS feel less physically attractive, physically fit and healthy. This can be very difficult to cope with emotionally. (kitzinger, willmot,2002)

PCOD women also have body image dissatisfaction owing to the physical appearance of hyperandrogenism, including obesity, hirsutism, cystic acne, seborrhea and hair loss possibly by influencing feminine identity Research shows that experiencing the symptoms of PCOS, including excess hair growth, hair loss, acne, weight changes and fertility problems, can negatively affect mood, self-confidence and body image. (Zangeneh et al.2012)

Sleep disturbances refers to altered sleep duration, delay of sleep onset, difficulty in maintaining sleep or awakening early. Poor sleep represents a serious health problem. Sleep disturbances are more prevalent in PCOD compared to the controls. PCOD women who are deprived of sleep experience difficulty making decisions, irritability, have problems with performance, and slower reaction times, placing them to perform their daily life activities. Some of the most serious potential problems associated with chronic sleep deprivation are high blood pressure, diabetes, heart attack, heart failure or stroke etc.

Studies indicate that sleep disturbances occur more frequently among women with PCOS compared to comparison groups without the syndrome. Women with PCOS tend to be overweight/obese, but this only partly accounts for their sleep problems as associations are generally upheld after adjustment for body mass index; sleep problems also occur in women with PCOS of normal weight (.Fernanfez et al.2018)

Kutenaee et al.showed that body image plays an important role in the sleep quality of women with PCOD. They shows lower level of sleep quality compared to the normal ones. The strongest effect from a psychological variable on sleep quality was body image which had negative impact on sleep quality of patients with PCOD. (Kutanaee et al. 2020)

NEED AND SIGNIFICANCE OF THE STUDY

The present study focuses on psychological distress,body image and sleep disruption in pcod and non pcod women. Nowadays, PCOD is one of the common problem in young women in their reproductive age and creates increased risk of life-long health issues. (Polycystic Ovarian Disease) is a condition where the ovaries release a lot of immature or partially-mature eggs which eventually turn into cysts. The cause of PCOD is still unknown. The predispossing factors are the association of PCOD with low-grade inflammation, excess insulin, production of male hormones (Hyperandrogenism) in high quantity and genetics can be found. Also, early age of menarche, unhealthy lifestyle and pollution are some of the contributing factors of PCOD

A pcod women undergoes physical and bodily changes that may have impact on their life.It may be associated with problems such as irregular menstrual cycle, excessive facial and body hair growth, acne, obesity, reduced fertility and decreased sleep level etc. It creates a major transition in their life as well as in physical and psychological states. It is extremely important to treat them early and to deal with the emotional stress caused by it.

This study will help to understand psychological distress, body image and sleep disruption in both polycystic and non-polycystic ovary syndrome women. It will be helpful to understand the factors that contribute psychological distress, sleep disruption and body image (dis)satisfaction in pcod and non pcod women which can positively or negatively have an impact on their life. It is also able to understand whether pcod women or non pcod women have more psychological distress, body image (dis) satisfaction and sleep disruption that may affect their daily life functioning.

This topic is selected because majority of the previous studies focussed on physiological correlates of pcod women and their arises question to find out whether there is any releationship between psychological distress which is accompanied with body image and sleep disruption. This study will help to know about psychological disturbances, mood swings and level of sleep that may positively or negatively influence their life.

Statement of the Problem

The problem under the study is entitled as "psychological distress, body image and sleep disruption among polycystic ovarian disease women and non polycystic ovarian disease women.

Definition of Key Terms Psychological distress

Psychological distress is largely defined as a state of emotional suffering characterized by symptoms of depression (e.g., lost interest; sadness; hopelessness) and anxiety (e.g., restlessness; feeling tense) (Mirowsky andRoss 2002).

In the present study, psychological distress means the total score obtained by the

Kessler Psychological Distress Scale (K10) (Kessler et al.2003)

Body image

Body image refers to the multifaceted psychological experience of embodiment that encompasses one's body-related self-perceptions and self-attitudes, including thoughts, beliefs, feelings, and behaviours. Body image has often been defined as the self-perception of the physical self and the feelings and thoughts that result from that perception (Cash, 2004; Grogan, 2006). Disturbance in any of these domains is referred to as body image concerns or negative body image.

In the present study, body image means the total score obtained by the Body Image

Avoidance Questionnaire (BIAQ) (Rosen, Srebnik, Saltzberg, Wendt,1991)

Sleep disruption

Sleep disruptions exist when sleep is insufficient to support adequate alertness, performance, and health, either because of reduced total sleep time or fragmentation of sleep by brief arousals. (Erich Richard,2014)

In the present study, sleep disruption means the total score obtained by the Sleep Quality Scale (SQS) (Shahid et al.2012)

Polycystic Ovary Syndrome Women

Polycystic Ovarian Disease (PCOD) is a medical condition in women in their reproductive age, where the ovaries produce multiple immature eggs which, over time, become cysts on the ovaries.

NON Polycystic Ovary Syndrome Women

Healthy state in which a woman is free from endocrine disorder and hormones are in a controlled level that may results in regular menstrual periods, and releated body image disturbances.

CHAPTER 2

Review of Literature

A collective works done by early scientist is technically called the literature. Any scientifical investigation starts with a review literature. In fact, working with literature is essential part of the research process which generates idea, helps in developing significant questions and is regarded as instrumental in the process of research design. The literature review is an integral part of the research process and makes a valuable contribution to almost every operational step. It has value even before the first step; that is, when you are merely thinking about a research question that you may want to find answers to through research journey. In the initial stages of research, it helps to establish the theoretical roots of study, clarify ideas and develop research methodology. Later in the process, the literature review serves to enhance and consolidate our own knowledge base and helps to integrate findings with the existing body of knowledge. Provides a theoretical background to study, it helps to establish the links between what are proposing to examine and what has already been studied, it enables to show how findings have contributed to the existing body of knowledge in our profession. It helps to integrate research findings into the existing body of knowledge.

Studies Related to Psychological Distress

Light, Chilcot and McBride (2021) conducted a study to examine the relationship between psychological distress and illness perception in women living with PCOS in the UK. The used a cross-sectional survey to assess psychological distress .Results indicated that more symptoms showed higher perceived consequences , lower personal control , and lower illness coherence were significantly associated with higher psychological distress

Tay, Teede, Hill, Loxton and Joham (2019) conducted a study on the prevalence of eating disorders in women with polycystic ovary syndrome (PCOS) compared with women without PCOS and examine the relationship between PCOS, body mass index, self-esteem, and psychological distress score. Compared with women not reporting PCOS, women reporting PCOS had higher prevalence of eating disorders, low self-esteem, and psychological distress

Leone et.al (2018) conducted a study to investigate the association between polycystic ovary syndrome (PCOS) and psychological distress, anger and quality of life. This case–control study included 30 PCOS patients and 30 non-PCOS women referring to Reproductive

Medicine Unit for infertility. Compared with control women, women with PCOS reported significantly higher scores on somatization, anxiety, hostility, psychoticism, overall psychological distress and a number of symptoms.

Kumar, Arvind Kumar, Mittal, Sumuna, Bahadur and Miata (2013) conducted a study psychological distress measurement among infertile Indian women undergoing in-vitro fertilization. The study comprised 125 infertile women undergoing IVF cycle. The results revealed that Higher educated

infertile women can better cope with stressful situation as compared to less educated infertile women. Psychological distress appears almost at par in case of conceived and non-conceived women. However, sexual dissatisfaction among infertile women on higher side.

Zangeneh et.al. (2012) conducted a study on assessment of psychological distress in women with polycystic ovary syndrome from Tehran. In this descriptive-analytical study, 81 patients with PCOS were recruited from Vali-e-Asr. Stress symptoms were assessed using the Understanding Yourself questionnaire. Results showed that 8 participants did not have any signs of stress, 32 had neurotic stress, 29 had high and 12 had extremely high levels of stress. This study showed that clinical signs of PCOS were most closely associated with psychological distress which has important implications in the diagnosis and treatment of disorders.

Kumarapeli, Seneviratne and Wijeyaratne (2011) conducted a study on health-related quality of life and psychological distress among Sri Lankan women with polycystic ovary syndrome. The mean score was significantly higher among women with PCOS than among controls indicating greater psychological distress

Cramer (1991) conducted a study on relationship between psychological distress and social support in women and men. Psychological distress was measured with the 30-item General Health Questionnaire. Results revealed that psychological distress was reduced in relation to the family support and it was highest for better qualified women and men in the youngest age group

Frey, Tobin, Beesley (2004) conducted a study on psychological distress in college women presenting for university counselling services. Peer, mentor, and community relationships year in school and family experiences were hypothesized to predict psychological distress.Results revealed that the predictors in hypothesis is positively correleated with psychological distress

Shaud and Asad(2020) conducted a study on psychological distress in women with early and late marriage in Pakistan. Results revealed that women with late marriages had higher marital adjustment, whereas women with early marriages showed higher psychological distress. Also,indicated low marital adjustment and interpersonal deference communication style as significant predictors of psychological distress in married women.

Studies related to Body Image

Kutenaee et.al (2020) conducted a study on the impact of depression, self-esteem, and body image on sleep quality in patients with PCOS. This study is a case control that is done in an infertility clinic in Hormozgan, Iran. The case group consisted of women with PCOS and the control group was healthy women whose partners had male infertility. Compared with the control group, there was a lower sleep quality in women with PCOS in all fields, especially subjective sleep quality, daytime function and use of

sleep medication. The strongest effect from a psychological variable on sleep quality was body image which had negative impact on sleep quality of patients with PCOS

Scaruffi et.al (2019) conducted a study on body image, personality profiles and alexithymia in patients with polycystic ovary syndrome (PCOS). A total of 59 women with PCOS and 38 healthy controls were participated. The PCOS group showed higher values of alexithymia and a higher body uneasiness. It seems that physical appearance and bodily function have a central place in the minds of women with PCOS, as well as in their relationships. However, it is a body they find it hard to feel and with which they mostly feel uncomfortable. Their approach to the outside world seems to be characterized by a certain degree of immaturity, anger, hostility and distrust. Low self-esteem also seems to be connected to a certain tendency toward introversion and withdrawal. This leads to problems in social, professional and intimate relationships.

Gislaine et al. (2019) conducted a study on body image and its relationship with sexual functioning, anxiety and depression in women with polycystic ovary syndrome. In this study, 94 women of reproductive age were grouped by body mass index (BMI) and sexual function. Women with PCOS presented with perceptual distortions of self-image independent of sexual function and BMI. Perception and cognitive-affective dimensions appear to play important roles in body image dysfunction in women with PCOS, and impact sexual dysfunction and depression associated the syndrome.

Kogure et al. (2019) conducted a study on Body image and its relationship with sexual functioning, anxiety and depression in women with polycystic ovary syndrome. Women with PCOS presented with perceptual distortions of self-image independent of sexual function and BMI. There were negative correlations between Hospital Anxiety Depression Scale -Anxiety and Hospital Anxiety Depression scale for depression. Scores and the FSFI total score, and HADS-D scores had positive correlations with weight, anthropometric indices, and BSQ total score. The degree of dis(satisfaction) was a predictor of FSFI total score, depression, and anxiety, and the FSFI total score was predicted by HADS-D. Desired and ideal-gender BMIs were risk factors for sexual dysfunction, and overweight and obesity were risk factors for the degree of dis(satisfaction).

Pastore, Patrie, Morris, Dalal and Bray (2011) conducted a study on body dissatisfaction and depression symptoms association among polycystic ovary syndrome women. The results revealed that body image was strongly associated with the severity of their depression symptoms. Most of the obese PCOS cohort had low body satisfaction and depression symptoms, therefore individual differences in the body dissatisfaction scores were not helpful in identifying depression symptom severity.

Liao, esic, Chadwick, Wavell and Prelevic (2008) conducted a study to examine the prevalence of body image distress in overweight and obese women with polycystic ovary syndrome (PCOS). This was an observational study whereby volunteers acted as their own control. Thirty-five women with PCOS volunteered for the study. Twenty-three returned six months later for reassessment. Of these, 12 completed

the exercise program (completers) and 11 did not (non-completers). Pre and post assessments showed a significant reduction in body image distress only for completers despite no significant change in Body mass index.

Bazarganipour, Ziaeiand Faghihzadeh(2007) conducted a study on body image satisfaction and self-esteem status among the patients with polycystic ovary syndrome. The aim was to study whether PCOS characteristics are associated with several aspects of psychological well-being namely self-esteem and body satisfaction. This was a cross-sectional study of 300 women with PCOS that was carried out in Kashan, Iran.ResultsIndicated that infertile women had lower levels of self-esteem and poorer body satisfaction compared with PCOS women without infertility. Furthermore, hirsute women experienced poorer self-esteem than women without hirsutism. Women with menstrual irregularities had higher body dissatisfaction. Moreover, women with higher body mass index scores had poorer body satisfaction but were not associated with self-esteem.

Himelein and Thatcher (2006) conducted a study on body image and depression among women with Polycystic ovary syndrome. Compared 40 women with PCOS to women with infertility but not PCOS, and to women with neither PCOS nor infertility, on measures of depression and body image. Women with PCOS reported higher depression scores and greater body dissatisfaction than comparison group women. Body image was strongly associated with depression overall, even after controlling body mass. Among women with PCOS, body dissatisfaction measures and education explained 66 percent of the variance in depression, suggesting explanations of the PCOS–depression link should consider the role of potentially mediating psychosocial variables.

Pruis,Janowsky (2010) conducted a study on assessment of body image in younger and older women. The results revealed that younger and older women have similar body dissatisfaction but that younger women have a higher drive for thinness and experience more societal influence on their body image.

Nangle,Johnson, Bergeron, Nangle (1994) conducted a study on body image changes on menstrual cycle in normal women. Changes in body image across the menstrual cycle and the relationship between these changes and menstrual distress were investigated in an effort to identify determinants of body dissatisfaction. The result showed that somatosensory and psychological symptoms of menstrual distress were significantly associated with body dissatisfaction during the perimenstrual phase including, water retention, autonomic reactivity, control, negative affect, and impaired concentration. This association of body dissatisfaction and menstrual distress strongly suggests that menstrual cycle changes play a significant role in body image.

Cash, Green (1986) conducted a study on body image among college women .The study examined the relationship between body weight and multiple parameters of body image. Thirty-six female undergraduate students with stable body weights served as subjects; 12 were underweight, 12 were normal weight, and 12 were overweight. The general finding of the study was that the perceptual, affective, and cognitive components of body image differed as a function of body weight

Studies related to Sleep disruption

Kite, Atkinson, McGregor, Clark, Brown, Kyrou, Randeva (2021) conducted a study on Sleep disruption and depression, stress and anxiety levels in women with polycystic ovary syndrome (PCOS) during the lockdown measures for COVID-19 in the UK. Given the comorbidity burden in women with polycystic ovary syndrome (PCOS), these lockdown measures may have a particularly negative impact on sleep health, quality of life (QoL), and depression/stress levels in this population. The aim of this study was to explore whether such potential problems were present in women with PCOS during the COVID-19 lockdown in the UK. The majority of recruited UK women with PCOS reported that the COVID-19 lockdown had a negative impact on their sleep, which was also associated with impaired QoL and higher depression/stress levels.

Kahal, Kyrou, Uthman, Brown, Johnson, Wall, Metcalfe, Parr, Tahrani, Randeva (2021) conducted a study on sleep disruption in women with polycystic ovary syndrome: a systematic review and meta-analysis. Results suggest that the prevalence of sleep disruption in women with PCOS and obesity is high

Mo, Mansfield, Joham, Cain, Bennett, Blumfield, Teede, Moran (2019) conducted a study To examine the prevalence of sleep disturbances in a large community-based cohort study in women with and without PCOS and its relationship to clinical, demographic and comorbid factors. Sleep duration and disturbances were self-reported. Three classes of sleep pattern were derived during latent class analysis (normal sleep duration with average sleep, normal sleep duration with sleep symptoms and short sleep duration with sleep symptoms) and compared between women with and without PCOS using multivariate regression, adjusting for body mass index (BMI), depressive symptoms, demographic and comorbid factors Sleep disturbances are more prevalent amongst women with PCOS after adjusting for BMI, depressive symptoms, demographic and comorbid factors. Targeted screening and management of sleep disturbances is warranted in PCOS.

Hachul, Polesel, Tock, Carneiro, Pereira, Zanella, Tufik and Togeiro (2019) conducted a study to evaluate the sleep of subjects with polycystic ovary syndrome (PCOS), with and without hyperandrogenism, in comparison with a healthy control group and examine the effects of hyperandrogenism and obesity on sleep parameters. The evaluation of sleep quality was made using validated questionnaires and polysomnography test. The frequency of obstructive sleep apnea was also compared between the groups. Results indicate that PCOS impairs subjective sleep quality, as well as objective sleep quality, due to a reduction in REM sleep stage time in women diagnosed with the syndrome. Obesity affected sleep-related parameters but hyperandrogenism had no effect. Only the PCOS group had obstructive sleep apnea diagnosis

Franik et.al (2016) conducted a study to analyse sleep disturbance in women with polycystic ovary syndrome. A group of ninety five women with Polycystic Ovary Syndrome were enrolled into the study. Sleep disturbances were assessed using validated questionnaires. On the grounds of Athens Insomnia Scale (AIS) evaluation a clinically significant insomnia was ascertained in 12.6% of women with PCOS, while according to Insomnia Severity Index (ISI) in 10.5%. Clinically significant insomnia according to both AIS and ISI, occurred significantly more often in women with PCOS than in women without PCOS based on the chisquare test. The Mann–Whitney U test revealed statistically significant difference between women

with and without PCOS based on total values of ISI. An excessive daytime sleepiness occurred at 7.4% of women with PCOS

Moran, March, Whitrow, Giles, Davies and Moore(2015) conducted a study to evaluate Sleep disturbances in a community-based sample of women with polycystic ovary syndrome cross-sectional study of 724 women, comprising 74% of a cohort study established retrospectively when women were around age 30 years. Comparisons were made between 87 women with PCOS, diagnosed using the Rotterdam criteria, and 637 women without this diagnosis in Adelaide, South Australia. Sleep disturbances were twice as common in women with PCOS compared with those without. Specifically, PCOS was associated with increasing occurrence of difficulty falling asleep confidence interval this association was attenuated but still statistically significant after accounting for Body mass index and depressive symptoms. Increasing occurrence of difficulty maintaining sleep was mediated by obesity and depressive symptoms, together. Other factors did not change these findings.

Thannickal, Brutocao, Alsawas, Morrow, Zaiem, Murad and Chattha(2012)conducted a study to evaluate the association of PCOS with eating, sleeping and sexual function disorders. The study included 36 studies reporting on 349,529 patients. Compared to women without PCOS, women with PCOS were more likely to have bulimia nervosa, binge eating, or any eating disorder but not anorexia nervosa. Women with PCOS were more likely to have sleep disorders like hypersomnia and obstructive sleep apnoea. Women with PCOS had lower sexual satisfaction as measured on a visual analogue scale, but no difference in Total Female Sexual Function Index. PCOS can be associated with an increased risk of eating and sleeping disorders as well as decreased sexual satisfaction.

Fogel, Malhotra, Pillar, Pittman, Dunaif and White (2001) conducted a study Sleep disturbance in women with polycystic ovary syndrome. The study included 18 overweight women with PCOS and compared them with 18 age- and weight-matched controls.The results demonstrated that sleep-disordered breathing is considerably more common and severe in overweight women with PCOS than in a group of reproductively normal control women who were matched for age and weight. In addition, several specific features of PCOS, namely elevated serum androgens and central obesity, were significantly associated with the severity of sleepdisordered breathing

Gontzas, Legro, Bixler, grayev, kales and Chrousos (2001) conducted a study to evaluate poly cystic ovary syndrome is associated with obstructive sleep disruption and daytime sleepiness. comparisons between two groups, a student's *t* test was used. Controls and PCOS patients were similar in terms of age, respectively, not significant, whereas PCOS women were heavier than the controls. In this study, PCOS women were 30 times more likely to suffer from sleep disruption than controls.

Bianchera, Arber (2007) conducted a study on caring and sleep disruption among women in Italy. This study examines how family structure, gender role expectations and caring roles impact on women's sleep

at different points in their life course. High levels of sleep disturbance were found among women who cared for older frail or disabled relatives. Women caring for young children and adult children living at home also experience decreased sleep quality. When informal care is unsupported, very demanding and stress provoking, sleep disturbance is greater, with women experiencing insomnia, frequent awakenings and light sleep

Studies related to Sleep disruption and psychological distress

Caldwell, Redeker (2009) conducted a study on sleep patterns and psychological distress in women living in an inner city**.** High levels of life stress, sleep pattern disturbance, and psychological distress were common among them. The results indicated that interventions on sleep may reduce the symptoms of psychological distress

Studies related to psychological distress and body image

Istvan, Zavela, Weidne (1992) conducted a study on psychological distress and body image among women in National Health and Nutrition Examination Survey. The results indicate that relative body weight is weakly related to psychological distress among women.

Studies related to Sleep disruption and Body image

Aquila et.al (2021) conducted a study on to examine the predictors of poor sleep quality in Moroccan women with gynaecological cancer after radical surgery. Results revealed that scores were positively correlated with higher scores of anxiety, depression, body image dissatisfaction and with lower self-esteem. Body image dissatisfaction and lower self-esteem were positively linked to sleep disturbance in women with gynaecological cancer after surgery.

OBJECTIVES

The main objectives of the present study are:

1. To find out whether there is any significant difference in psychological distress among pcod and non pcod women

2. To find out whether there is any significant difference in sleep disruption among pcod and non pcod women

3. To find out whether there is any significant difference in body image among pcod and non pcod women

4. To find out whether there is any significant relationship between psychological distress and body image among pcod women

5. To find out whether there is any significant relationship between psychological distress and sleep disruption among pcod women

6. To find out whether there is any significant relationship between body image and sleep disruption among pcod women

7. To find out whether there is any significant relationship between psychological distress and body image among non pcod women

8. To find out whether there is any significant relationship between psychological distress and sleep disruption among non pcod women

HYPOTHESES

The main hypothesis of the present study are:

1. There will be significant difference in psychological distress among pcod and non pcod women

2. There will be significant difference in sleep disruption among pcod and non pcod women

3. There will be significant difference in body image among pcod and non pcod women

4. There will be significant relationship between psychological distress and body image among pcod women

5. There will be significant relationship between psychological distress and sleep disruption among pcod women

6. There will be significant relationship between body image and sleep disruption among pcod women

7. There will be significant relationship between psychological distress and body image among non pcod women

8. There will be significant relationship between psychological distress and sleep disruption among non pcod women

CHAPTER 3

METHOD

The method of a research work includes the methods and procedures used in a research study or experiment. This provides the information by which a study's validity is judged. Therefore, a clear and precise description of how experiment was done and the rationale for why specific experimental procedures were chosen was required. This chapter describes, what was done to answer the research question, how it was done, justifies the experimental design and how the results were analysed. Therefore, the method section describes the materials used in the study, how the materials were prepared for the study, how measurements were made and what calculations were performed, and state which statistical tests were done to analyse the data. The major focus of the present study is to ascertain psychological distress, body image and sleep disruption in pcod women and non pcod women.

Research Design

The present study was descriptive in nature. Descriptive research is a research method that describes the characteristics of the population or phenomenon that is being studied. There are several distinct methods to conduct descriptive research. Among these, survey (questionnaire) method was used for the present study. The sample was selected using non probability sampling technique. Non probability sampling is also known by different names such as deliberate sampling, purposive sampling and judgement sampling. In this type of sampling, subjects are chosen to be part of the sample with specific purpose. The researcher believes that some subjects are more fit of the research compared to other individuals. Subjects were purposefully chosen for the research. In this type of sampling, items of the sample are selected deliberately by the researcher. Data was collected using the tool having well established psychometric properties. The response was according to manual. The data were analysed with the help of appropriate statistical methods using SPSS and the findings are reported in the APA style.

Sample

The study was conducted on 50 Pcod women and 50 non pcod women. A total of 100 women participants (pcod women and non pcod women) were selected for the present study. The sample method used was non probability sampling. Questionnaire was used for sample collection. The participants were selected from different districts in Kerala which includes

Thrissur, Malappuram, Palakkad and Kozhikode

Table 1 Breakup of the Sample

District	Number of Pcod	Number of non pcod
Thrissur	12	7
Palakkad	14	18
Malappuram	17	20
Kozhikkode	7	5
Total	50	50

Inclusion Criteria

- Participants must be females
- Participant must be from Kerala
- Pcod women of age between 18-35 years.
- Non-pcod women of age between 18-35 years

Exclusion Criteria

- Male participants

Tools

The tools used for data collection are:

1. Personal Data Sheet (developed by the investigator)

2. Psychological distress (Kessler et al. 2003)

3. Sleep disruption scale (Shahid et al.2012)

4.Bodyimage avoidance questionnaire (Rosen,Srebnik,Saltzberg,Wendt,1991)

Psychological Distress

The Kessler Psychological Distress Scale (K10) [1] is a simple measure of psychological distress. The K10 scale involves 10 questions about emotional states each with a five-level response scale. The measure canbe used as a brief screen to identify levels of distress. The tool can be given to patients to complete, or alternatively the questions can be read to the patient by the practitioner. In the context of injury management, the measure can be provided to the patient where recovery is not proceeding as anticipated (for instance, between weeks four and six), and may highlight the need for more regular review, or referral to a specialist health provider such as a psychologist.

Questions three and six do not need to be asked if the response to the preceding question was 'none of the time'. In such cases questions three and six should receive an automatic score of one.

Reliability and validity

The 2000 Collaborative Health and Well-Being Survey were used to test reliability of the K10. The ending kappa and weighted kappa scores ranged from 0.42 to 0.74, indicating that the K10 is a moderately reliable instrument

K10 presented excellent Cronbach's alpha (α) (0.93) in its initial validation (Kessler et al., 2002). It even showed an alpha between 0.88 and 0.94 in countries such as Argentina Canada (Sampasa-Kanyinga et al., 2018), the West Bank (Easton et al., 2017), South Africa (Andersen et al., 2011), France (Arnaud et al., 2010), Japan (Sakurai et al., 2011), the Netherlands (Donker et al., 2010), Mexico (Terrez et al., 2011), and Portugal (Pereira et al., 2017), showing good psychometric quality overall.

Administration

The subject was asked to follow the instructions in the scale. The instructions given were as follows. "The questions given below are related to emotional states with a five level response scale. Read each question carefully and select your answer, which best describes the way you have been feeling the past 4 weeks.

Scoring

Each item is scored from one 'none of the time' to five 'all of the time'. Scores of the 10 items are then summed, yielding a minimum score of 10 and a maximum score of 50. Low scores indicate low levels of psychological distress and high scores indicate high levels of psychological distress.

Body Image Avoidance Questionnaire

The BIAQ is a 19-item instrument designed to measure behavioral tendencies that often accompany body-image disturbance. In particular, the questionnaire deals with avoidance of situations that provoke concern about physical appearance, such as avoidance of physical intimacy, social outings, and tight-fitting clothes. Since these avoidance behaviours are common in persons with body dissatisfaction and since there are no measures of this component of the problem, the authors interviewed 40 randomly selected female residents of a university dormitory and categorized commonly reported complaints of behavioural changes associated with negative body image into the items of this questionnaire. The measure is viewed as useful for targeting changes in avoidance of these situations as a result of treatment. **Reliability and Validity**

The BIAQ has excellent internal consistency, with a Cronbach's alpha of .89, and is very stable with a two-week, test-retest reliability coefficient of .87.

The BIAQ has fair to good concurrent validity, with a low butsignificant correlation of .22 with body size estimation, a correlation of .78with the Body Shape Questionnaire, and correlations of .68 and .63 with the Shape Concern and Weight Concern scales respectively. The BIAQ has good known-groups validity, significantly distinguishing between clinical (bulimia nervosa) and nonclinical populations. Finally, the BIAQ has been shown tobe sensitive to changes in clients with body-image disturbance.

Administration

The questionnaire contain statement about body image disturbance. Please circle the number from 0 to 5 which best describes how often you engage in these behaviours at present time. Read each questions carefully and mark your response

Scoring

The BIAQ is scored by simply totalling the scores on the individual,6-point items, providing a potential range of scores from 0 to 94. Although the BIAQ comprises four factors derived through factor analysis (clothing, social activities, eating at restaurants, and grooming and weight), these factors are not scored separately

Sleep Quality Scale

Consisting of 28 items, the SQS evaluates six domains of sleep quality: daytime symptoms, restoration after sleep, problems initiating and maintaining sleep, difficulty waking, and sleep satisfaction. Developers hoped to create a scale that could be used as an all-inclusive assessment tool – a general, efficient measure suitable for evaluating sleep quality in a variety of patient and research populations.

Reliability and validity

An initial psychometric evaluation conducted by Yi and colleagues [1] found an internal consistency of .92, a test-retest reliability of .81. The SQS is strongly correlated with results obtained on the Pittsburgh Sleep Quality Index. Scores achieved by the insomnia sample were significantly higher than those of controls, indicating good construct validity.

Administration

The following survey is to know the quality of sleep you had for the last one month. Read each questions carefully and check the closest one. Please respond to all the questions. Your responses will be used strictly for research purposes and will be kept confidential

Scoring

Using a four-point, Likert-type scale, respondents indicate how frequently they exhibit certain sleep behaviours (0 = "few," 1 = "sometimes," 2 = "often," and 3 = "almost always"). Scores on items belong to factors 2 and 5 (restorations after sleep and satisfaction with sleep) and are reversed before being tallied. Total scores can range from 0 to 84, with higher scores demoting more acute sleep problems

Personal Data Sheet

A personal data sheet was constructed for the present study. This included questions like name, age, socioeconomic status and place of residence.

Data collection

The research was conducted by circulating questionnaires in Google form. The participants were assured about the confidentiality. Data of the both pcod women and non pcod and multiply would our collected separately from different districts of Kerala. First, a personal data sheet was provided where the participants has to give their details, then psychological distress, body image questionnaire and sleep quality .The participants were instructed to read each statement and bubble the option they felt most appropriately. Following their response, the participants were thanking for their participation. At the end of the data collection the information was extracted in the form of MS excel sheet. This was then coded into a form appropriate for statistical analysis.

Data Processing

The collected data were scored as per the manual. The scored data and information in the personal data schedule is scrutinized, coded and then subjected to appropriate analysis.

Analysis of data

The obtained data were subjected to statistical analysis using SPSS. 't' test and correlational analysis were the statistical analysis employed.
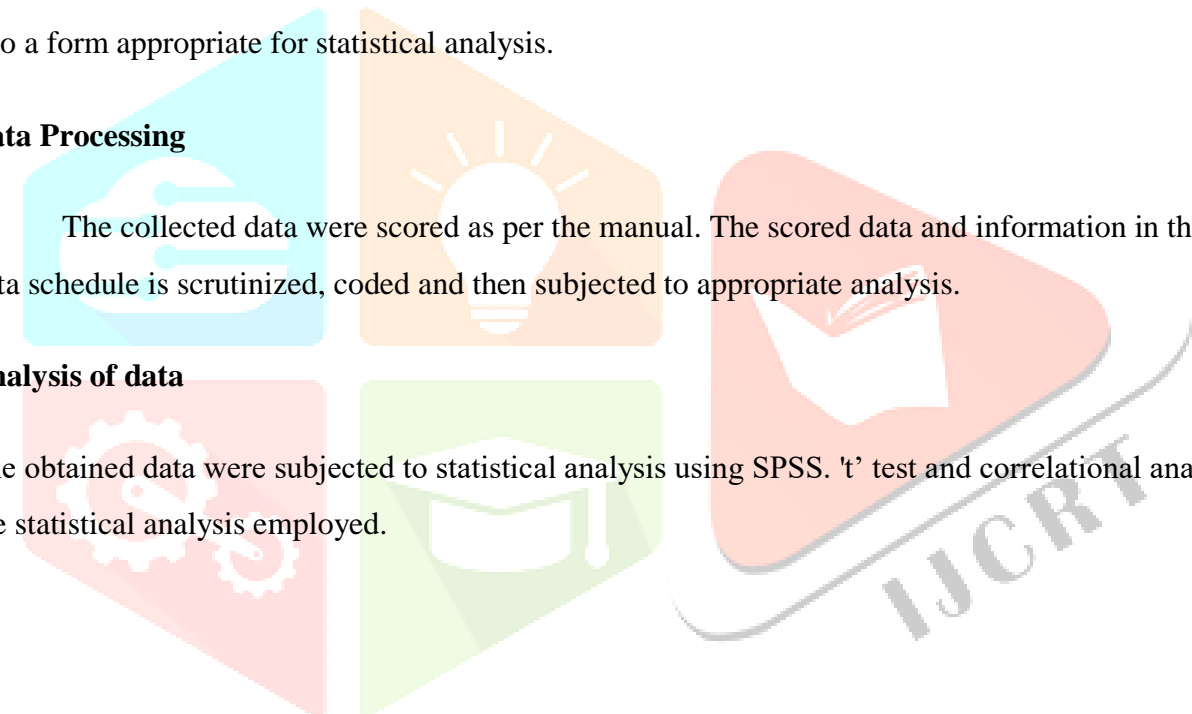
CHAPTER 4

RESULT AND DISCUSSION

This chapter deals with the result of analysis from the obtained data. The analysis was done using t test and correlational analysis. The results are reported and discussed below the following section. Section 1 provides the results and discussion of the comparison of the main variables under study with respect to the two-group different group of the participants. Section 2 provide the results and discussion of the relationships obtained among the main variables under study on the two different groups of the participants.

Section 1: Comparison of the main variables

Psychological distress is a set of painful mental and physical symptoms that are associated with normal fluctuation of mood in most people. It is a subjective experience as the severity of the distress is dependent upon the situations and how it perceived by the individual.

Body image refers to the mental picture one forms of one's body as a whole, including its physical characteristics and one's attitude towards these characteristics. Sleep disruptions exist when sleep is insufficient to support adequate alertness, performance, and health, either because of reduced total sleep time or fragmentation of sleep by brief arousals.

Comparison based on psychological distress among Polycystic ovarian disease women and non polycystic ovarian disease women

Psychological distress may be experienced by polycystic ovarian disease women and non polycystic ovarian disease women that may affect with their daily life functioning. One of the main objectives of the current study is to compare the psychological distress among polycystic ovary syndrome women and non polycystic ovary syndrome women. To find out whether there is any significant difference in psychological distress among polycystic ovary syndrome women and non polycystic ovary syndrome women, t test was carried out. Table 2 shows the mean value and standard deviations of the scores in psychological distress among polycystic ovarian disease women and non polycystic ovarian disease women.

Table 2

Mean and standard deviation of the scores in psychological distress among women with polycystic ovarian disease and without polycystic ovarian disease women.

Variable	Pcod (N=50)		Non Pcod (N=50)		t
	Mean	SD	Mean	SD	
Psychological distress	18.92	5.742	14.408	5.638	4.101

Table 2represents the mean, standard deviation and t values of the score of psychological distress among women with polycystic ovarian syndrome and without polycystic ovarian syndrome women ranging from 18-35 years. The result shows that there is significant difference in psychological distress among women with pcod and without pcod women at 0.01 level. The mean score of women with pcod (M=18.942) is

found to greater than the mean score of women without pcod (M=14.408). This indicates that psychological distress is seen higher among women with pcod. Psychological distress describes the unpleasant feelings or emotions that may have when we feel as overwhelmed. These feelings and emotions can get in the way of your daily living and create stressors that are unable to cope with. Pcod affects approximately 4%-18% of reproductive aged women and it is associated with reproductive, metabolic and psychological dysfunctions. The psychological distress is found to be more in women with pcod than without pcod women. It may be because women with pcod may experience psychological distress due to the features of PCOD or diagnosis of a chronic disease. Psychological distress in pcod is releated to the factors like sadness, anxiety, fatigue, avoidance of social interactions, fear, anger and moodiness.

The present result was supported by the study conducted by Zangeneh et al. (2012). The results of their study reported that the patients diagnosed with pcod experiences lower level of psychological distress due to the features of pcod and releated to biological and psychological dysfunctions.

Comparison based on Sleep disruption among women with Polycystic ovarian disease and without polycystic ovarian disease women

Sleep disruption in pcod depends on the problems associated with initiating and maintaining sleep, difficulty walking, daytime symptoms, restoration after sleep and sleep satisfaction. One objective of the present study is to compare sleep disruption among women with pcod and without pcod women. In order to find out whether there is any significant difference in sleep disruption among women with pcod and without pcod, t test was carried out.

Table 3

Mean and standard deviation of the scores in sleep disruption among women with pcod and without pcod

Variable	Pcod (N=50)		Non Pcod (N=50)		t
	Mean	SD	Mean	SD	
Sleep disruption	35.115	10.384	24.531	10.811	5.019

Table 3 represents the mean and standard deviation of sleep disruption among women with pcod and without pcod women. The results show that there is significant difference in sleep disruption among women with pcod and without pcod women at 0.01 level. The mean score obtained for the sleep disruption of women with pcod(M=35.115) is found to be higher than the mean score obtained for the women without pcod(M=24.531). That means sleep disruption is seen more among women with pcod than that of women without pcod. This may be due to the poor metabolic functions, hormonal imbalances and disturbances caused by the condition which is a major predictor of poor sleep in pcod women. Poor sleep in pcod leads to increased stress, decreased productivity and contribute to depressed mood states. Unhealthy sleep patterns result in poor mental health and immune health, high blood sugar levels, and even makes difficulty to maintain a healthy and balanced diet.

The present result was supported by the study conducted by kite et al. (2021). The results of their study reported that the majority of women with pcod had negative effects upon their sleep and findings suggests that poor sleep health as a significant problem in females.

Comparison based on Body image among women with Polycystic ovarian disease and without polycystic ovarian disease women

Body image refers to a psychological representation of the body and has been described as a multifaceted construct comprising cognitive, emotional, perceptual components. A women with pcod undergoes bodily changes like excess hair growth (hirsutism), scalp hair loss, acne, irregular or infrequent periods, weight gain, difficulties with fertility etc. One of the objectives of the present study is to compare body image among women with pcod and without pcod women. To find out whether there is any significant difference in body image among women with pcod and without pcod women, t test was carried out.

Table 4

Mean value and standard deviations of the scores in Body image among women with pcod and without pcod women

Variable	Pcod (N=52)		Non Pcod (N=49)		T
	Mean	SD	Mean	SD	
Body image	34.288	15.125	21.286	13.435	4.557

Table 4 represents the mean, standard deviation and t values of the score of body image among pcod and non pcod women ranging from 18-35 years. The result shows that there is significant difference in body image among pcod and non pcod at 0.01 level. The mean score of women with pcod (M=34.288) is found to be higher than the mean score of women without pcod (M=21.286). This indicates that body image is seen higher among women with pcod. This may be because of women with pcod have greater body dissatisfaction with appearance, perceived loss of feminity, feeling less sexually attractive and highly self-conscious about their appearance. Changes in appearance, irregular or absent menstrual periods and difficulty in conceiving results in a negative impact on women with pcod. They undergoes major bodily changes especially like increasing BMI, extra body hair including the chest and stomach(hirsutism), acne or oily skin, male pattern baldness, skin tags, dark or thick skin patches on the back of the neck, armpits and under the breasts etc. They have difficulty to accept the changing body and the fact that their body will never be like before. A women with pcod who have negative body image have a dislike of public speaking, are more timid and withdraw from relationships with others as satisfaction from one's body leads to greater confidence and comfort in social relations, which affects both intimate and daily life interactions. Negative body image on the other hand corresponds with higher social anxiety and withdrawal from social interactions

The present result was supported by the study conducted by Urszula and Milena (2021). The results of their study reported that women with polycystic ovarian syndrome are not satisfied with their own outer appearance and have a negative impact on their body image.

Section 2: Relationship among the main variables

In this section, the inter correlation among the main variables, like psychological distress; sleep disruption and body image were examined using the Pearson correlational analysis.

Relationship between psychological distress and body image among women with Polycystic ovarian disease

The coefficient of correlation obtained between psychological distress and body image among women with pcod are presented in Table 5

Table 5

The correlation coefficient between psychological distress and body image and among women with polycystic ovarian disease

Variable		Psychological distress	Body image
Psychological Distress	Pearson's r	-	
Body image	Pearson's r	0.012	-

Table 5represents the coefficient of correlation between psychological distress and body image among pcod women from the table, it can be seen that there is positive correlation between distress and body image among pcod women with no significance. It means that when psychological stress increases ,body image disturbances also increases and vice versa. This may be because Changes in the appearance, irregular or absent menstrual periods, and difficulties in conceiving can result in psychological distress and may also influence the feminine identity of the women with PCOD.

Relationship between psychological distress and sleep disruption among women with Polycystic ovarian disease

The coefficient of correlation obtained between psychological distress and sleep disruption among women with pcod are presented in Table 6

Table 6

The correlation coefficient between psychological distress and sleep disruption among women with polycystic ovarian disease

Variable		Psychological distress	Sleep disruption
Psychological Distress	Pearson's r	-	
Sleep disruption	Pearson's r	0.007	-

Table 6 represents the coefficient of correlation between psychological distress and sleep disruption among pcod women. From the table, it can be seen that there is positive correlation between distress and sleep disruption among pcod women with no significance. It means that when psychological stress increases, sleep disruption also increases and vice versa. This may be because sleep disturbances have consequences for daytime mood, cognition and psychomotor functioning which may create psychological distress in daily life activities. As pcod is characterized by metabolic disturbances, the endocrine system may play an important role in governing sleep wake cycle and thus it is more likely to have sleep disturbances and plays a complex interrelationship.

Relationship between sleep disruption and body image among women with Polycystic ovarian disease

The coefficient of correlation obtained between sleep disruption and body image among women with pcod are presented in Table 7

Table 7

The correlation coefficient between sleep disruption and body image among women with pcod

Variable		Sleep disruption	Body image
Sleep disruption	Pearson's r	-	
Body image	Pearson's r	0.165	-

Table 7 represents the coefficient of correlation between sleep disruption and body image among pcod women. From the table, it can be seen that there is positive correlation between sleep disruption and body image among pcod women without significance. It means that when body image disturbances increase, sleep disruption also increases and vice versa. This may be because due to loss of body control leads to sleep disturbances in pcod. Disease related changes such as acne, hirsutism, obesity, fear and fear

of infertility affect a woman's identity causes body image disturbances and fear of negative evaluation by others and this in turn leads to sleep disruption.

The present result was supported by the study conducted by kutanae et al. (2019). The results of their study reported that compared to control group, there was a lower sleep in women with pcod and body image plays an important role in sleep quality of women.

Relationship between psychological distress and body image among women without Polycystic ovarian disease women

The coefficient of correlation obtained between psychological distress and body image among women without pcod are presented in Table 8

Table 8

The correlation coefficient between psychological distress and body image among women without polycystic ovarian disease

Variable		Psychological distress	Body image
Psychological distress	Pearson's r	-	
Body image	Pearson's r	0.232	-

Table 8 represents the coefficient of correlation between psychological distress and body image among non pcod women. From the table, it can be seen that there is positive correlation between psychological distress and body image among women without Pcod without significance. It means that when body image disturbances increase, psychological distress also increases and vice versa. This may be because feeling uncomfortable with appearance of body size or shape contribute psychological distress related to their body states. A woman without pcod also undergoes major bodily changes, especially like increasing body mass index, swellings, stretch marks during their, darkening and loosening of skin, these changes brings negative body image concern in women. They have difficulty to accept the changing body and the fact that their body will never be like before. Factors like social media influence, support from partner, family, peers, self esteem, adaptability to change, eating habits, influences the body image of women without pcod.

Relationship between psychological distress and sleep disruption among women without polycystic ovarian disease

The coefficient of correlation obtained between psychological distress and sleep disruption among women without polycystic ovarian disease are presented in Table 9

Table 9

The correlation coefficient between psychological distress and sleep disruption among women without pcod

Variable		Psychological distress	Sleep disruption
Psychological distress	Pearson's r	-	
Sleep disruption	Pearson's r	0.103	-

Table 8 represents the coefficient of correlation between   psychological distress and sleep disruption among non pcod women. From the table, it can be seen that there is negative correlation between psychological distress and sleep disruption in women without polycystic ovarian disease without significance. It means that when psychological distress increases, sleep disruption reduces. This may be because a woman without pcod, who is psychologically well may have less sleep disruption. As they have lower level of psychological distress, they are more satisfied with their sleep. They may also experience lower level of stress accompanied or they can manage their stressors to an extend in their life. It indicates that if they are physically and mentally well, they are able to cope with the challenges and difficulties in their life and thus they are strong enough to handle their issue and this in turn reduces sleep disruption and makes a women healthy.

CHAPTER 5

Summary and Conclusions

The chapter includes the resume of the study, the major findings, tenability of the hypotheses, implication of the study, limitations of the study and suggestions for the future research.

Resume of the study

Polycystic Ovarian Disease (PCOD) is a medical condition in women, where the ovaries produce multiple immature eggs which, over time, become cysts on the ovaries.In this condition, the hormones of a woman go out of balance which creates various symptoms, including the absence of ovulation, irregular menstrual cycle, difficulty conceiving, weight gain, acne, and hirsutism.

Psychological distress is a state that involves discomfort and unpleasant feelings that affect daily life activities of a person. It is a general term used to describe unpleasant feelings or emotions that impact a person's level of functioning. It has been suggested that women with PCOD have a lower self esteem, more negative self destructive feelings and cognitions and higher level of psychological distress owing to their condition.

Body image is a component of a larger concept of self that for women includes feeling feminine and attractive, enjoying one's body as a symbol of social expression, and as a way of being in the world. The way in which one experiences her body is highly subjective, and is a product of her perceptions, thoughts, and feelings about body size, competence and function Negative perception of body image among PCOD include dissatisfaction with appearance, perceived loss of femininity, feeling less sexually attractive, and self-consciousness about appearance Some of them may concern about these changes, some may not. Self-esteem, selfacceptance, a healthy relationship with food and physical activity, family, peer group, media and social pressures make changes in the thought of their concerns about their body image.

Sleep disruption exist when sleep is insufficient to support adequate alertness, performance, and health, either because of reduced total sleep time or fragmentation of sleep by brief arousals. Symptoms of sleep disturbances may include feeling excessively tired during the day, poor concentration and mood changes,irregular sleep and wake cycle and difficulty falling asleep.

OBJECTIVES

The main objectives of the present study are:

1.To find out whether there is any significant difference in psychological distress among women with pcod and without pcod women

1. To find out whether there is any significant difference in sleep disruption among women with pcod and without pcod women

2. To find out whether there is any significant difference in body image among women with pcod and without pcod women

3. To find out whether there is any significant relationship between psychological distress and body image among women with pcod and without pcod women

4. To find out whether there is any significant relationship between psychological distress and sleep disruption among women with pcod and without pcod women

5. To find out whether there is any significant relationship between body image and sleep disruption among women with pcod

6. To find out whether there is any significant relationship between psychological distress and body image among women with pcod

7. To find out whether there is any significant relationship between psychological distress and sleep disruption among women without pcod

8. To find out whether there is any significant relationship between sleep disruption and body image among women without pcod

HYPOTHESES

The main hypothesis of the present study are:

1) There will be significant difference in psychological distress among women with pcod and without pcod women

2) There will be significant difference in sleep disruption among women with pcod and without pcod women

3) There will be significant difference in body image among women with pcod and without pcod women

4) There will be significant relationship between psychological distress and body image among women with pcod

5) There will be significant relationship between psychological distress and sleep disruption among women with pcod

6) There will be significant relationship between body image and sleep disruption among women with pcod

7) There will be significant relationship between psychological distress and body image among women without pcod

8) There will be significant relationship between psychological distress and sleep disruption among women without pcod

9) There will be significant relationship between sleep disruption and body image among women without pcod

Method Sample and Procedure

The study was conducted on 52 women with pcod and 52 women without pcod. A total of 101participants (pcod and non pcod) were selected for the present research study.

Tools

The tools used for data collection are:

1. Personal Data Sheet (Developed by the Investigator).

2. Psychological distress (Kessler et al. 2003)

3. Sleep disruption scale (Shahid et al.2012)

4. Body image avoidance questionnaire (Rosen, Srebnik, Saltzberg, Wendt,1991)

Analysis of Data

The statistical analysis was carried out by using SPSS (version 16.0). Microsoft word and excel sheets were used to generate tables. The obtained data were analysed using the following statistical techniques:

1. Student's t-test

2. Pearson Correlation Coefficient

Major Findings

1)There is significant difference in psychological distress among women with pcod and without pcod women

2)There is significant difference in sleep disruption among women with pcod and without pcod women

3)There is significant difference in body image among women with pcod and without pcod women.

4)There is positive correlation between psychological distress and body image among women with pcod

5)There is positive correlation between psychological distress and sleep disruption among women with pcod

6)There is positive correlation between body image and sleep disruption among women with pcod

7)There is positive correlation between psychological distress and body image among women without pcod

8)There is negative correlation between psychological distress and sleep disruption among women without pcod

Tenability of the hypotheses

The hypotheses formulated are presented below.

Hypothesis-1

There will be significant difference in psychological distress among women with pcod and without pcod women

The obtained the result revealed that there is significant difference in psychological distress among women with pcod and without pcod women. Psychological distress is seen more in women with pcod

The hypothesis is accepted

Hypothesis- 2

There will be significant difference in sleep disruption among women with pcod and without pcod women

The obtained result revealed that there is significant difference in sleep disruption among women with pcod and without pcod women, sleep disruption is seen more in women with pcod The hypothesis is accepted

Hypothesis- 3

There will be significant difference in body image among women with pcod and without pcod women

The result revealed that their significant difference in body image among women with pcod and without pcod women. Body image is seen more in women with pcod The hypothesis is accepted.

Hypothesis- 4

There will be significant relationship between psychological distress and body image among women with pcod

The obtained results revealed that there is positive correlation between psychological distress and body image.

The hypothesis is partially accepted.

Hypothesis- 5

There will be significant relationship between psychological distress and sleep disruption among women with pcod

The obtained results revealed that there is positive correlation between psychological distress and sleep disruption among women with pcod

The hypothesis is accepted.

Hypothesis-6

There will be significant relationship between body image and sleep disruption among women with pcod The obtained results revealed that there is positive correlation between body image and sleep disruption among women with pcod The hypothesis is accepted.

Hypothesis-7

There will be significant relationship between psychological distress and body image among women without pcod

The obtained results revealed that there is positive correlation between psychological distress and body image among women without pcod.

Hypothesis-8

There will be significant relationship between psychological distress and sleep disruption among women without pcod

The obtained results revealed that there is negative correlation between psychological distress and sleep disruption among women without pcod.

Implications of the study

Polycystic Ovarian Disease (PCOD) is a medical condition in women in their reproductive age, where the ovaries produce multiple immature eggs which, over time, become cysts on the ovaries. The present is study conducted among women with pcod and without pcod women to find out their psychological distress, sleep disruption and body image. The study revealed that there is high psychological distress, sleep disruption and body image among women with pcod. The study also found relationship between psychological distress, sleep disruption and body image in women with pcod and negative correlations between body image and psychological distress and sleep disruption among women without pcod. The study can be useful in understanding the impact of psychological distress, sleep disruption and body image on both women with pcod and without pcod women. It will be helpful to understand the emotions and problems that women with pcod faces other than their physical problems. It also provides us information about the condition of women with and its impact on their daily life functioning. The study can be beneficial for the counsellors, hospitals and researchers to plan several interventions to focus on women with pcod. This will also help to ensure low psychological distress, sleep disruption and negative body image among women with pcod which could improve their psychological conditions as well as for maintaining better health which in turn reflects on effective treatments. By gaining adequate information this could even help to reduce the prevalence of depression, anxiety and other circumstances which may occur due to the poor mental status of the women with pcod

Limitations of the study

Despite all attempts to carry out the study scientifically and systematically, the study had the following limitations.

1. The sample for the study was restricted to only 4 districts of Kerala.

2. The sample size selected for the study was limited.

3. The investigator, due to time limit, could not conduct an elaborative study. 4. The investigator, due to the unavailability of equal number of sample in sociodemographic variables, only the relevant variables can be analysed.

5. The relevant studies in psychological distress and sleep disruption and body image was very limited.

6.The subjective bias of the investigator can influence uneducated participants.

7. The sample collection was conducted through google forms, so direct contact with samples was not possible.

Suggestions for future research

In the light of the present study, the following suggestions are made for future research.

1 Further studies may be conducted using sample from more hospitals

2. Further studies can be extended to more districts and states.

3.The study can be extended to include other psychological variables related to psychological distress, sleep disruption and body image

4. The study can be conducted by adding more relevant socio demographic variables.

5. The study can be done by utilizing much more time with the participants.

Conclusion

The present study has examined the psychological distress, sleep disruption and body image among women with pcod and without pcod women. The study explores the impact of psychological distress, sleep disruption and body image among women with pcod and without pcod women and also the main relationship between these variables among women with pcod and without pcod women. So, the study has a wide impact on women with pcod and the challenges they are facing.

APPENDICES

PERSONAL DATA SHEET

Age   :

Pcod/Non pcod   :

Socioeconomic status   :

Place of residence   :

KESSLER PSYCHOLOGICAL DISTRESS SCALE (k 10)

The Kessler Psychological Distress Scale (K10) is a simple measure of psychological distress. The K10 scale involves 10 questions about emotional states each with a five-level response scale. The measure can be used as a brief screen to identify levels of distress. The tool can be given to patients to complete, or alternatively the questions can be read to the patient by practitioner. Please tick the answer that is correct for you

Please tick the answer that is correct for you:	All of the time (score 5)	Most of the time (score 4)	Some of the time (score 3)	A little of the time (score 2)	None of the time (score 1)
1. In the past 4 weeks, about how often did you feel tired out for no good reason?					
2. In the past 4 weeks, about how often did you feel nervous?					
3. In the past 4 weeks, about how often did you feel so nervous that nothing could calm you down?					
4. In the past 4 weeks, about how often did you feel hopeless?					
5. In the past 4 weeks, about how often did you feel restless or fidgety?					
6. In the past 4 weeks, about how often did you feel so restless you could not sit still?					
7. In the past 4 weeks, about how often did you feel depressed?					
8. In the past 4 weeks, about how often did you feel that everything was an effort?					
9. In the past 4 weeks, about how often did you feel so sad that nothing could cheer you up?					
10. In the past 4 weeks, about how often did you feel worthless?					

Sleep Quality Scale

The following survey is to know the quality of sleep you had for the last one month. Read the questions and check the answer.

Examples

Rarely: None or 1-3 times a month

Sometimes: 1-2 times a week

Often: 3-5 times a week

Almost always: 6-7 times a week

		Rarely	Sometimes	Often	Almost Always
1	I have difficulty falling asleep.				
2	I fall into a deep sleep,				
3	I wake up while sleeping.				
4	I have difficulty getting back to sleep once I wake up in middle of the night.				
5	I wake up easily because of noise.				
6	I toss and turn.				
7	I never go back to sleep after awakening during sleep.				
8	I feel refreshed after sleep.				
9	I feel unlikely to sleep after sleep.				
10	Poor sleep gives me headaches.				
11	Poor sleep makes me irritated.				
12	I would like to sleep more after waking up.				
13	My sleep hours are enough.				
14	Poor sleep makes me lose my appetite.				
15	Poor sleep makes hard for me to think.				
16	I feel vigorous after sleep.				
17	Poor sleep makes me lose interest in work or others.				
18	My fatigue is relieved after sleep.				
19	Poor sleep causes me to make mistakes at work.				

20	I am satisfied with my sleep.					
21	Poor sleep makes me forget things more easily.					
22	Poor sleep makes it hard to concentrate at work.					
23	Sleepiness interferes with my daily life.					
24	Poor sleep makes me lose desire in all things.					
25	I have difficulty getting out of bed.					
26	Poor sleep makes me easily tired at work.					
27	I have a clear head after sleep.					
28	Poor sleep makes my life painful.					

BODY IMAGE AVOIDANCE QUESTIONNAIRE (BIAQ)

The BIAQ is a 19-item instrument designed to measure behavioural tendencies that often accompany body-image disturbance. In particular, the questionnaire deals with avoidance of situations that provoke concern about physical appearance, such as avoidance of physical intimacy, social outings, and tight-fitting clothes. Since these avoidance behaviours are common in persons with body dissatisfaction and since there are no measures of this component of the problem. Circle the number which best describes how often you engage in these behaviours at the present time.

		Always	Usually	Often	Sometimes	Rarely
1	I wear baggy clothes	5	4	3	2	1
2	I wear clothes I do not like.	5	4	3	2	1
3	I wear darker colour clothing.	5	4	3	2	1
4	I wear a special set of clothing, e.g., my "fat clothes"	5	4	3	2	1

5	I restrict the amount of food I eat.	5	4	3	2	1
6	I only eat fruits, vegetables, and other low calories foods	5	4	3	2	1
7	I fast for a day or longer.	5	4	3	2	1
8	I do not go out socially if I will be "checked out."	5	4	3	2	1
9	I do not go out socially if the people I am with will discuss weight.	5	4	3	2	1
10	I do not go out socially if the people if the people I am with are thinner than me.	5	4	3	2	1
11	I do not go out socially if it involves eating.	5	4	3	2	1
12	I weigh myself.	5	4	3	2	1
13	I am inactive.	5	4	3	2	1
14	I look at myself in the mirror.	5	4	3	2	1
15	I avoid physical intimacy.	5	4	3	2	1
16	I wear clothes that will divert attention from my weight	5	4	3	2	1
17	I avoid going clothes shopping.	5	4	3	2	1
18	I don't wear "revealing" clothes (e.g., bathing suits, tank tops, or shorts).	5	4	3	2	1
19	I get dressed up or made up	5	4	3	2	1

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