Materials and Methods: This study was conducted on women suffering from infertility who attended targeted clinics in the Brak Al-Shati area during the period from March 1, 2020, to March 1, 2021. The study included 442 infertile women aged between 18 and 49 years. Of these, 120 women were diagnosed with Polycystic Ovary Syndrome (PCOS) according to the Rotterdam criteria proposed at the ESHRE/ASRM conference. Out of these, 65 women who met all study criteria were selected. All anthropometric measurements were taken, and the study questionnaire was completed. Amenorrhea was defined as the absence of menstruation for more than 6 months(1), while oligomenorrhea was defined as a menstrual delay of more than 35 days up to 6 months . Infertility was defined as the inability to conceive, without contraceptive use, after one year of regular cycles in women under the age of 35, and after six months in women over 35 years(2) old . There are two types of infertility: primary infertility, where the couple has never conceived, and secondary infertility, which is the inability to conceive after a previous pregnancy(3) . Hirsutism: Refers to excessive hair growth, a common complaint among women with PCOS, characterized by the growth of coarse hair in a male-pattern distribution. The modified Ferriman-Gallwey score was used to assess hirsutism in nine different body areas (upper lip, chin, chest, upper back, lower back, upper abdomen, lower abdomen, arms, and thighs), with a total score of 8 or above indicating hirsutism(4) . Ultrasound Imaging: PCOS was diagnosed when the number of follicles exceeded 11, each measuring 2–9 mm in diameter, in one or both ovaries, and/or an increased ovarian volume of more than 10 ml in at least one ovary(5) . Statistical Analysis: Data were statistically analyzed using SPSS version 25. The mean, standard deviation, and significance levels were calculated. An Independent Sample t-test was used to identify differences between different groups, while the Spearman correlation test was applied to analyze non-parametric data to study the relationships between variables, with a significance level set at 0.05. Relationship between Variables: The study results, using the Spearman correlation test, showed a significant positive correlation between PCOS and age, while an inverse correlation was observed with hirsutism. No significant correlation was found with the remaining variables. The study also showed that among the 65 PCOS patients, 35.38% were overweight, and 38.46% were obese. Additionally, the waist-to-hip ratio was high among obese patients (49.23%). Oligomenorrhea was observed in 33.85% of patients, amenorrhea in 6.15%, while the rest had normal menstruation. Relationship between Age and PCOS Incidence: Based on the questionnaire sample of 65 patients, the women were divided into three age groups: 20–29 years, 30–39 years, and 40–49 years. The results indicated that the highest incidence rate was among women aged 30–39 years, accounting for 38.46%. PCOS Phenotypes: PCOS phenotypes were classified into four types. The study showed that phenotype (A) included 18 patients (27.69%), and phenotype (C) included 21 patients (32.31%), while phenotypes (B) and (D) each included only 4 patients (6.15%). dditionally, some cases were diagnosed with polycystic ovaries but did not fit into any of the known PCOS phenotypes. What is the Role of Hormones in Polycystic Ovary Syndrome (PCOS) When women develop PCOS, their reproductive hormones become imbalanced, leading to problems with the ovaries, such as irregular menstrual cycles or absence of menstruation. The hormones involved in PCOS include: Insulin: This hormone regulates blood sugar levels, but in women with PCOS, the body may not respond to insulin effectively. Here are the key findings from some of these studies: Syndrome (PCOS) in Saudi Arabia

Comprehensive Study in the Gulf Cooperation Council (GCC) Countries A systematic review and meta-analysis were conducted on seven studies in the GCC countries, including four studies from Saudi Arabia, to estimate the prevalence of PCOS among women with infertility. The results showed that the overall prevalence rate was 30%, with higher rates among obese women (BMI ≥30) at 27%, and among women over the age of 35 at 59%. The prevalence was also higher in women with primary infertility (37%) compared to those with secondary infertility (17%). Study in Jeddah A study conducted in Jeddah evaluated 183 Saudi women diagnosed with PCOS. Hormonal levels and clinical factors were assessed, and the results showed elevated levels of luteinizing hormone (LH) and testosterone, along with decreased levels of follicle-stimulating hormone (FSH) and progesterone, regardless of age or BMI. Study in Al-Qunfudhah Governorate A community-based study was carried out on 826 women in Al-Qunfudhah Governorate. Among them, 11.9% reported having been previously diagnosed with PCOS. The study also found that knowledge about PCOS was higher among younger, married women and those with university-level education. Here are the key findings from some of these studies(PCOS) in Spain: Study on Overweight or Obese Women (2006) A study involving 113 overweight or obese women in Spain found that 28.3% were diagnosed with PCOS based on criteria that included hyperandrogenism, oligo-ovulation, and the exclusion of secondary causes. The results indicated that the prevalence of PCOS was significantly higher in this group compared to women with a normal weight. Multicenter Study in Madrid and Bologna (2012) A multicenter study was conducted involving 592 premenopausal women (393 from Madrid, Spain, and 199 from Bologna, Italy) who volunteered as blood donors. The results showed that hyperandrogenism, hirsutism, and acne were equally common in both groups, with a combined prevalence of functional hyperandrogenism, PCOS, and idiopathic hirsutism at 5.4%. Polycystic Ovarian Syndrome (PCOS) is one of the most common endocrine disorders affecting women of reproductive age. This study investigates the prevalence of PCOS, focusing on patient-related and disease-related factors. A cross-sectional survey was conducted to explore obstetricians' and gynecologists' perspectives on the diagnosis, prevalence, and management of PCOS. A total of 35 specialists, each with at least three years of clinical experience, participated. The survey included open-ended questions covering patient-related factors (e.g., symptoms, lifestyle) and disease-related aspects (e.g., prevalence, diagnostic methods, treatment). Data were collected through face-to-face interviews from January to April 2022, ensuring confidentiality and standardized procedures to minimize bias. This study analyzed PCOS's prevalence, etiology, symptoms, diagnosis, and treatment. The highest prevalence (62.9%) was observed in the 20–29 age group, declining with age. Unknown causes accounted for 51.42% of cases, followed by hormonal and genetic factors (41.42% each). Menstrual irregularity (80%) was the most common symptom. Ultrasound was the primary diagnostic tool (82.85%), while metformin was the most prescribed treatment (71.42%). PCOS was the most prevalent condition among gynecological disorders (57.14%). These findings highlight the significant burden of PCOS and the need for improved management strategies. Our study concluded that the PCOS remains a significant health concern both globally and within Libya. Highlights the necessity for heightened awareness, early screening, and tailored management strategies. Further research is warranted to explore the underlying causes of regional prevalence variations and to develop culturally appropriate interventions that address

.the unique needs of the Libyan female population