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OWN META-ANALYSIS OF CROSS-SECTIONAL STUDIES ON THE PREVALENCE OF PCOS IN THE GCC COUNTRIES IN COMPARISON WITH THE EUROPEAN REGION

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Relevance. Polycystic ovary syndrome (PCOS) a significant global public health problem and one of the most common hormonal disorders affecting women, often becoming apparent during the reproductive years. An estimated 10–13% of women globally are thought to have PCOS, but up to 70% of affected women are undiagnosed. The prevalence of PCOS may be higher among women in some racial or ethnic groups than others, and some women have higher genetic propensity for metabolic complications. However social determinants of health in different regions shape the extent to which women with PCOS seek and receive proper health care.

Aim: to conduct own meta-analysis of cross-sectional studies on the prevalence of PCOS in the Gulf Cooperation Council (GCC) countries in comparison with the countries of the European region.

Materials and methods. Five databases (PubMed, Embase, CINAHL, Web of Science, and SCOPUS) were searched from their inception to 2022 for studies where the eligible studies included data on PCOS prevalence among infertile women. A random-effects model assessed the pooled prevalence, stratified by age, BMI, and infertility type through a questionnaire that primarily focused on general and lifestyle characteristics especially in GCC countries. Furthermore, information and studies were conducted on environmental and genetic factors, in addition to income, education, fertility, behavior, and metabolic risk were collected in European countries.

Results and their discussion. Between 2000 and 2022, research across the GCC revealed that approximately 30% of infertile women are affected by PCOS, with a crude prevalence of 26.5% (539/2033). The study identified significantly higher prevalence rates among women aged 35 and older (59.0%), those with primary infertility (37.0%), and those with an obese BMI (27.0%). These findings suggest that the metabolic and endocrine disruptions of PCOS are central to the region's rising infertility burden, yet research remains limited and inconsistent, with a notable lack of data from the UAE and Bahrain. To address this, clinical focus must prioritize early screening and multifaceted treatments, ranging from lifestyle management to healthcare policies for improvement of public awareness and standardize diagnostic criteria across the Arabian Peninsula.

PCOS prevalence in Europe varies widely (2.3%–28%), with Central and Eastern Europe showing rates over three times higher than Western Europe. While Sweden reports the lowest prevalence, the Czech Republic ranks among the highest, with Belarus showing a moderate rate of 431 cases per 100,000 women. These regional disparities are linked to the Socio-demographic Index (SDI), where higher income and education correlate with lower PCOS rates, alongside genetic factors and environmental influences like fetal programming. Although overall trends remained stable between 1990 and 2016, prevalence peaks in the 35–44 age group and presents a notable burden for adolescents. Ultimately, the high association with metabolic syndrome and infertility across Europe necessitates improved diagnostic standards and targeted care for these diverse populations.

Conclusions. In summary, PCOS is a major driver of infertility and metabolic risk across both regions, affecting roughly 30% of infertile women in the GCC and between 2% and 28% of the general female population in Europe. While GCC prevalence is heavily influenced by obesity and primary infertility, European trends show a stark three-fold disparity between Eastern and Western nations linked to socio-economic and genetic factors. Together, these findings underscore a global necessity for standardized diagnostic criteria and targeted screening to address the rising reproductive health burden in both the Middle East and Europe.