The College of Graduate Studies and the College of Medicine and Health Sciences Cordially Invite You to a

PhD Dissertation Defense

Entitled

INFERTILITY CHARACTERIZATION, FACTORS ASSOCIATED WITH PRIMARY INFERTILITY, AND SEROPREVALENCE OF GENITAL INFECTIONS: A CROSS-SECTIONAL SURVEY IN ABU DHABI, UNITED ARAB EMIRATES

by

Noor Motea Abdo

Faculty Advisor

Dr. Rami Hani Al-Rifai, Institute of Public Health

College of Medicine and Health Sciences

Date & Venue

1:00 PM

Thursday, 03 November 2022

Yanah Theatre, Room 2C010

Join Zoom Meeting

Abstract

Introduction: Worldwide, infertility affects 8%–10% of couples and it could be primary or secondary. In the United Arab Emirates (UAE), one in every six couples are facing difficulties in conceiving. However, there is a noticeable lack of epidemiological studies and empirical data characterizing populations seeking infertility treatment and consultation in the UAE. Therefore, to inform health policy planning, evidence-based data is required to understand the most common type of infertility and burden of exposure to genital pathogens. The objectives of this study are to characterize fertility-treatment seeking patients, investigate factors associated with primary infertility, and to estimate the seroprevalence of six pathogens known to be transmitted genitally and associated with infertility in the Abu Dhabi Emirate, UAE.

Method: A cross-sectional study was carried out in two major fertility clinics in the Abu Dhabi Emirate, UAE, from December 2020 to May 2021. Ethical approvals were obtained prior the study. Fertility-treatment seeking patients attending the two fertility clinics where consecutively invited to voluntarily participate in a self-administered survey and to provide blood samples. Eligible patients were ≥18 years old and seeking infertility treatment. Patients <18 years old and spontaneously pregnant women with no previous history of infertility were excluded. Collected sera samples were screened for 14 immunoglobulins related to previous or current exposure to six genital pathogens (*Chlamydia trachomatis*, *Treponema pallidum*, Herpes simplex virus type 2, *Ureaplasma urealyticum*, *Mycoplasma hominis*, and *Candida albicans*) using enzyme-linked immunoassay.

Results: Of 1,616 patients seeking infertility treatment, 928 consented to participate and were included in this study. The mean current age and age at marriage of the included patients were 35.7±6.7 standard deviation (SD) years and 25.2±6.3 SD years, respectively. The majority (90%) of the surveyed patients were females or from Middle Eastern countries (88.0%). More than two-thirds (71.8%) were obese or overweight. The most common comorbidity was diabetes mellites (8.2%). Secondary infertility (62.5%) was 1.7-time more common than primary infertility (37.5%). Patients with primary infertility were younger (OR: 0.95, 95% CI: 0.93–0.97), with lower BMI (OR: 0.97, 95% CI: 0.94–0.99), and current smokers (OR: 1.49, 95% CI: 1.00–2.23). Also, they were less likely to be with consanguineous marriage (OR: 0.37, 95% CI: 0.26–0.52), with diabetes mellites (OR: 0.48, 95% CI: 0.27–0.85). The most common detected immunoglobulin was *C. albicans* IgG (36.5%) followed by *M. hominis* IgG antibodies (33.9%), and *C. trachomatis* IgG antibodies (19.0%). Overall, lifetime exposure (IgG seropositive) or potentially currently exposed (IgM or IgA seropositive) to either of the screened pathogens was estimated at 67.6% and 38.8%, respectively. Seropositivity to the screened pathogens was high among males, patients of African nationality, and patients with low educational attainment. Males were 3.6-times more likely to be seropositive to *C. trachomatis* compared to females (OR: 3.6, 95% CI: 1.7–7.51, *P*<0.001). Current smokers and patients ever-experienced pregnancy loss had significantly higher odds of seropositivity to *C. trachomatis* and *C. albicans* compared to other patients.

Significant contributions: Providing evidence-based data on burden of primary and secondary infertility, identifying factors associated with primary infertility population and raise awareness about preventable factors in ever-been fertile populations experiencing secondary infertility. Also, to raise awareness about health risks associated with exposure to genital pathogens and accessibility to and the use of available preventive means.

Gap filled: This study fills major gaps in a critical public health issue related to the reproductive health in the UAE. Tailored reproductive health and genital infections awareness and promotion campaigns are warranted to enhance population's health and families' well-being.

Keywords: Infertility, reproductive health, genital infections, Chlamydia, Syphilis, Candida albicans, Mycoplasma, Ureaplasma.