

IN VITRO FERTILIZATION OUTCOMES IN PHYSICIANS VERSUS NON-PHYSICIANS

Authors: Jasmine Eliwa, M.D. (1), Patricia J Goedecke, MS (2), Jim Y Wan, Ph.D. (2), Rachel Susan Weinerman, M.D. (3), Joseph Findley, M.D. (3), Kathryn D Coyne, M.D. (3), Archana Ayyar, M.D. (3), Evelina Manvelyan, M.D. (3), Sung Tae Kim, PhD, HCLD (3), and Rebecca Flyckt, M.D. (3)

Affiliations:

- (1) Department of Obstetrics and Gynecology, University of Tennessee Health Sciences Center, Memphis, TN
- (2) Department of Preventive Medicine, University of Tennessee Health Science Center, Memphis, TN
- (3) Division of Reproductive Endocrinology and Infertility, University Hospitals Fertility Center/Case Western Reserve University, Beachwood, OH

Background:

At least 1 in 4 female physicians experiences infertility. In addition, a prior study demonstrated that fewer oocytes were retrieved from physicians during oocyte cryopreservation compared to non-physicians, despite undergoing the process at a younger age [1].

Objective:

This study sought to compare in vitro fertilization (IVF) outcomes in female physicians versus non-physicians.

Methods and Materials:

This is a retrospective cohort study of female patients undergoing their first cycle of IVF at an academic institution between January 1, 2020 and December 31, 2023. Donor oocyte cycles were excluded. Patients were categorized into four groups according to occupation: physicians, nurses, non-healthcare workers, and unemployed patients. The primary outcomes were number of total and mature eggs retrieved and oocyte maturation, fertilization, and usable blastocyst formation rates. Additional comparisons were made for mean age, anti-mullerian hormone (AMH), body mass index (BMI), and peak estradiol level on day of trigger. Data was analyzed via descriptive statistics and analysis of variance (ANOVA) tests when appropriate using R statistical software.

Results:

The cohort included 41 physicians, 92 nurses, 565 non-healthcare workers, and 42 unemployed patients. Mean age was highest in physicians and significantly differed between groups (36.4 in physicians, 33.8 in nurses, 35.4 in non-healthcare workers, and 34.7 in unemployed patients; $p=0.003$). Mean BMI also significantly differed between groups (26.0 in physicians, 28.5 in nurses, 28.3 in non-healthcare workers, 25.4 in unemployed patients; $p=0.009$). Mean AMH was 3.2 in physicians, 3.4 in nurses, 3.8 in non-healthcare workers, and 2.9 in unemployed patients. There was no significant association between mean AMH and occupation ($p=0.349$). All groups had similar peak estradiol (E2) levels on trigger day and egg maturation, fertilization, and usable blastocyst formation rates (see Table), including when controlled for age.

Mean	Physicians (n=41)	Nurses (n=92)	Non-healthcare workers (n=565)	Unemployed (n=42)	P-value*
Peak E2 (pg/mL)	2856	2624	2628	2774	0.84
# Eggs Retrieved	14	15	14	15	>0.9
# Mature Eggs	10	11	11	10	0.7
Egg Maturation Rate	74.5%	78%	74.8%	70.8%	0.29
Fertilization Rate	82.6%	83.1%	79.9%	80.3%	0.51
Usable Blastocyst Formation Rate	46.4%	50.4%	46.9%	46.6%	0.69

* Based on one-way ANOVA test

Conclusions:

Although physicians are at a higher risk for infertility and underwent IVF at a later age in our study, their IVF outcomes and AMH levels were similar to non-physicians. The study is limited by a small sample size of physicians and lack of pregnancy data.

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Reference:

1. Holden, M.G., Shi, C., Shin, D. and New, E.P., 2023. PLANNED OOCYTE CRYOPRESERVATION OUTCOMES IN PHYSICIANS COMPARED TO NON-PHYSICIANS. *Fertility and Sterility*, 120(4), p.e150.