

In the name of God



Curriculum Vitae

Personal Information

- **First name:** Zahra
- **Last name:** Shams Mofarahe
- **Status:** Assistant Professor of Department Biology and Anatomical Sciences
- **Gender:** Female
- **Marital status:** Married
- **Date of birth:** 11st January 1970
- **Place of birth:** Iran-Tehran
- **Nationality:** Iranian
- **Languages:** Persian (native), English
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Educational Background

- Received BSc. Degree in Midwifery from Shahid Beheshti University of Medical Sciences in ۱۹۹۷.
- Received MSc. Degree in Midwifery from Iran University of Medical Sciences in ۲۰۰۲.
- Received PhD. Degree in Reproductive Biology from Shahid Beheshti University of Medical Sciences in ۲۰۱۵.

Research Background

- **MSc:** The subject of my M.Sc. thesis was “The effect of marital counseling on sexual satisfaction of young couple”.
- **PhD:** The subject of my PhD thesis was “The comparison of developmental gens expressions (Fshr, Kit ligand, Figla, Gdf-۹) in vitrified human ovarian tissue after transplantation and culture”.
- Supervisors of my PhD thesis: Prof. Marefat Ghaffari Novin, Prof. Mojdeh Salehnia.

Professional Membership

- Iranian Society of Embryology and Reproductive Biology, since ۲۰۱۱ till now.
- Medical Council of the Islamic Republic of Iran, since ۲۰۰۰ till now.
- Iran Scientific Association of Midwifery, ۲۰۰۰-۲۰۱۷.

Honors

- The Top Student with the ۱st rank in Bachelor Degree, ۱۹۹۷.
- The Top Student with the ۱st rank in PhD Degree, ۲۰۱۵.
- The setup of human ovarian tissue vitrification technique in Sarem hospital in ۲۰۱۴.
- The Setup of human ovarian tissue vitrification technique in Infertility research center Shiraz university of medical sciences in ۲۰۱۵.

Practical Skills

- **Laboratory skills**

- In vitro fertilization
- Intra cytoplasmic sperm Injection
- Cryopreservation Techniques (Sperm, Oocyte, Embryo, Ovarian Tissue)
 - Vitrification
 - Slow freezing
- In vitro culture of cortical ovarian Tissue
- Xenograft transplantation of cortical ovarian Tissue
- Animal experimentation with mouse as well as immune suppressed mice
- Real-time PCR set up and interpretation of results
- Troubleshooting of Real-time PCR techniques in the laboratory
- Design of real-time PCR primers

- **Computer Skills**

- 1. Received ICDL certification from Tehran College of Technology

Workshop Instructor

- Practical workshop of human ovarian tissue vitrification held by Yazd University of Medical Sciences in ۲۰۱۲
- Practical workshop of Intra uterian insemination held by Shahid Beheshti University of Medical Sciences in ۲۰۱۳
- Practical workshop of Bovine ovarian tissue vitrification held by International society of Embryology & reproductive biology in ۲۰۱۵
- Practical workshop of human ovarian tissue vitrification held by International society of Embryology & reproductive biology in ۲۰۱۶

Publications

- Effect of human ovarian tissue vitrification on the expression of developmental genes, *IJRM*; 2010
- Effect of Human Ovarian Tissue Vitrification/Warming on the Expression of Genes Related to Folliculogenesis, *IBJ*; 2010
- The effect of Methamphetamine on oocyte quality, fertilization rate and embryo development in mice, *IJWHR*; 2010
- Expression of folliculogenesis related genes in vitrified human ovarian tissue after two weeks in vitro culture, *cell Journal*; 2017
- Improvement of oocyte in vitro maturation from mice with polycystic ovary syndrome by human mesenchymal stromal cell-conditioned media, 2018
- Testicular toxicity and reproductive performance of streptozotocin-induced diabetic male rats: the ameliorating role of silymarin as an antioxidant, *Toxin Reviews*, 2018
- Astaxanthin prevents the methotrexate-induced reproductive toxicity by targeting oxidative stress in male mice, *Toxin Reviews*, 2018
- Vitamin C restores ovarian follicular reservation in a mouse model of aging, *Anatomy & cell biology*; 2019
- Exosomal microRNA panels as biomarkers for hematological malignancies, *Current Problems in Cancer*, 2021
- Effect of 1, 25 (OH) 2-vitamin D3 on expression and phosphorylation of progesterone receptor in cultured endometrial stromal cells of patients with repeated implantation failure, *Acta Histochemica*, 2020
- Photobiomodulation preconditioned human semen protects sperm cells against detrimental effects of cryopreservation, *Cryobiology*, 2021
- Does in vitro fertilization affect the expression of miRNAs and their biogenesis pathway in preimplantation mouse embryos?, *Birth Defects Research*, 2020
- The effect of PEGylated iron oxide nanoparticles on sheep ovarian tissue: An ex-vivo nanosafety study, *Heliyon*, 2020
- Does timing in ICSI cycle affect oocyte quality and reproductive outcomes? A prospective study, *Archives of Gynecology and Obstetrics*, 2020

- MicroRNAs, small regulatory elements with significant effects on human implantation: a review, *Journal of Assisted Reproduction and Genetics*, 2023
- The effect of L-carnitine on Oocyte Mitochondrial Activity after Cryopreservation, *Novelty in Biomedicine*, 2022
- Meiosis Resumption of Immature Human Oocytes following Treatment with Calcium Ionophore In Vitro, *Cell Journal*, 2021
- The effect of kisspeptin on the maturation of human ovarian follicles in culture following vitrification -thawing processes, *Research Square*, 2022
- Comparative Effect of Photobiomodulation on Human Semen Samples Pre- and Post-Cryopreservation, *Reproductive sciences*, 2022
- Sitagliptin/metformin improves the fertilization rate and embryo quality in polycystic ovary syndrome patients through increasing the expression of GDF⁹ and BMP¹⁰: A new alternative to metformin (a randomized trial), *Journal of Reproductive Immunology*, 2022
- Protective Effects of Fisetin in the Mice Induced by Long-Term Scrotal Hyperthermia, *Reproductive sciences*, 2021
- Evaluation of Expression and Phosphorylation of Progesterone Receptor in Endometrial Stromal Cells of Patients with Recurrent Implantation Failure Compared to Healthy Fertile Women, *Reproductive sciences*, 2021
- Impact of ejaculatory abstinence period and semen characteristic on the reproductive outcomes after intracytoplasmic sperm injection, 2021
- Serum anti-Müllerian hormone is associated with oocyte dysmorphisms and ICSI outcomes, *International journal of gynaecology and obstetrics: the official organ of the International Federation of Gynaecology and Obstetrics*, 2019
- Improvement of in situ Follicular Activation and Early Development in Cryopreserved Human Ovarian Cortical Tissue by Co-Culturing with Mesenchymal Stem Cells, *Cells Tissues Organs*, 2020
- Effect of vitrification on biogenesis pathway and expression of development-related microRNAs in preimplantation mouse embryos, *Cell and Tissue Banking*, 2021
- Folliculogenesis-Associated Genes Expression in Human Vitrified Ovarian Tissue after Xenotransplantation in γ -Irradiated Mice, *Cell Journal*, 2020

- Does timing in ICSI cycle affect oocyte quality and reproductive outcomes? A prospective study, Archives of Gynecology and Obstetrics, ۲۰۲۰
- Practical Approaches to Improve the Sensitivity of the Volume-Based Cellular Enumeration of the BeWo Cell Line-Derived Spheroids as an In Vitro Embryo Model: MTT Versus Neutra, Crescent Journal of Medical & Biological Sciences, ۲۰۲۰
- Prevalence of Human Papillomavirus in Iranian infertile men and its association with semen quality, Research square, ۲۰۲۲
- Male obesity is associated with sperm telomere shortening and aberrant mRNA expression of autophagy-related genes, Basic and Clinical Andrology, ۲۰۲۳
- Relationship Between Heavy Metal levels in Seminal Plasma and Sperm Quality in Iranian Men, MENS HEALTH JOURNAL, ۲۰۲۱

Research Interests

- Fertility cryopreservation
- In vitro maturation oocyte
- In vitro fertilization
- Stem cells
- Implantation and miRNAs
- Recurrent implantation failure
- Embryo culture

Teaching Experiences

- PhD students at Shahid Beheshti Medical University since ۲۰۱۵ till now:
 ۱. Fertility Cryopreservation
 ۲. Andrology
 ۳. Reproductive Endocrinology
- Midwifery Students at Shahid Beheshti Medical University since ۲۰۱۵ till now:
 ۱. Medical Embryology
 ۲. Assisted Reproductive Techniques

- Midwifery Students at Iran Medical University, Shiraz Medical University and Ghom Azad university since ۲۰۰۳ till ۲۰۱۰

Supervisor of Ongoing Theses

- The effect of vitrification on the expression of implantation related miRNAs and their biogenesis elements in mouse blastocyst
- A study on the effects of vitamin D γ on expression of progesterone receptors and decidualization of cultured human endometrial stromal cells of patients with repeated implantation failure
- The effect of magnetic hyperthermia of nanoparticles on survival and development of follicles and developmental genes expressions in vitrified sheep ovarian tissue
- The effect of Fisetin on sperm parameters, histology structure and oxidative stress of adult male mice under scrotal hyperthermia
- The effect of vitamin D γ administration on gene expression and protein levels of progesterone receptors, VDR and endometrial decidualization factors (IGFBP λ , PRL, HOXA λ) in endometrium of patients with recurrent implantation failure
- Investigating the microbiota of ovarian follicular fluid and vaginal secretions in infertile women with polycystic ovary syndrome with and without favorable outcomes of intracytoplasmic sperm injection
- Evaluation of the effect of crocin supplement on the follicular oxidative stress and expression levels of GDF λ , BMP λ , NRF γ genes in patients with Diminished ovarian reserve (DOR)
- Effect of Human Papilloma Virus (HPV) infection on semen quality parameters and sperm functional characteristics of asthenozoospermia patients
- Evaluation of autophagy-related genes expression (AMPK α λ , Beclin λ , Bcl γ and Bax), apoptotic changes, telomere length, and DNA integrity in spermatozoa of obese subfertile men compared to normal weight fertile individuals

- Investigating the amount of “Neuropeptide S receptor 1” marker in infertile females with endometriosis and evaluating its relationship with endometriosis grade and success of Interacytoplasmic sperm injection
- The effect of androferti supplementation on semen parameters of infertile men referred to Taleghani Hospital Infertility Center

Adviser of Ongoing Theses

- The effect of bone marrow mesenchymal stem cells on development and survival of follicles on matrigel-cultured human ovarian tissue
- The effect of human bone marrow mesenchymal stem cells conditioned medium on the in vitro fertilization of PCOS mice oocytes
- The Combined Effects of Photobiomodulation and Naringenin antioxidant on Improving Sperm Functional Parameters in asthenozoospermic patients
- The effect of aqueous extract of *Camellia sinensis* (L.) Kuntze on damage caused by the lyophilization process to the sperm of normozoospermic individuals and patients with asthenoteratozoospermia
- Effects of Quercetin-loaded nanoselenium on spermatogenesis in Cyclophosphamide-induced azoospermic mice
- Effects of Edaravone supplementation on semen parameters, apoptosis, chromatin integrity, lipid peroxidation and mitochondrial membrane potential in cryopreserved human spermatozoa with asthenoteratozoospermia

Projects

- **Principal Investigator of ongoing projects**
- ✓ Survey of Seminal Plasma Metals Concentration Effect on Semen Quality
- ✓ The effect of vitrification on the expression of implantation related miRNAs in mouse blastocysts derived from in vivo fertilization
- ✓ Effect of Silymarin on sperm parameters and DNA integrity in male diabetic Rats
- ✓ Evaluation the effects of astaxanthin on human sperm parameters during cryopreservation
- ✓ The comparison of in vitro and in vivo fertilization effect on implantation related miRNAs (miR-21, miR-24, miR-93, Let-7a), their target (stat3) and biogenesis genes expression in mouse blastocyst
- ✓ The effect of in vitro ascorbic acid and α -tocopherol supplementation on human spermatozoa parameters and on the developmental capacity of embryos obtained from ICSI
- ✓ The relationship of serum Anti-Mullerian hormone (AMH) levels with oocyte morphology, fertilization and embryo development in ICSI cycles
- ✓ The association of interval duration between ovulation trigger to intracytoplasmic sperm injection (ICSI) with fertilization outcomes: a retrospective study
- ✓ The effect of L-Carnitine supplementation on quality of vitrified human in vitro matured oocyte and embryo developmental competence after ICSI
- ✓ The effect of coated and non-coated iron oxide magnetic nanoparticles on survival of follicles and oxidative stress in sheep ovarian cortical tissue
- ✓ The effect of sexual abstinence period on semen parameters and outcomes of intracytoplasmic sperm injection cycles; a retrospective study
- ✓ The relationship of gonadotropin dose during ovarian hyperstimulation with oocyte quality and reproductive outcomes in ICSI cycle: a retrospective study
- ✓ A study on the expression of progesterone receptors in human endometrial stromal cells of patients with repeated implantation failure
- ✓ A study on the effects of vitamin D on decidualization of cultured human endometrial stromal cells
- ✓ The effect of Fisetin on sperm parameters, histology structure and oxidative stress of adult male mice under scrotal hyperthermia

- ✓ The relationship of gonadotropin dose during ovarian hyperstimulation with oocyte quality and reproductive outcomes in ICSI cycle: a retrospective study
- ✓ The effect of vitamin D^r administration on gene expression and protein levels of progesterone receptors, VDR and endometrial decidualization factors(IGFBP¹, PRL, HOXA¹⁰) in endometrium of patients with recurrent implantation failure

- **Collaborator of projects**

- ✓ Protective effects evaluation of Astaxanthine against arsenic-induced testicular damage
- ✓ The effect of bone marrow mesenchymal stem cells on development and survival of follicles on matrigel-cultured human ovarian tissue
- ✓ Evaluation of the protective effects of astaxanthin on metotrexate induced-testicular toxicity
- ✓ Systematic review of anti-hyperglycemia and anti-hypertension drugs on semen quality
- ✓ Determination of relation between infectious diseases and sperm parameters: A systematic review and meta analysis
- ✓ The effect of human bone marrow mesenchymal stem cells conditioned medium on the in vitro fertilization of PCOS mice oocytes
- ✓ Effect of bone marrow mesenchymal stem cells conditioned medium on the quality of the in vitro matured mice pcos oocyte and subsequent fertilization

Books

- **Translation in Persian:**

1. Principles & Practice of Assisted Reproductive Technology

- **Author of the books:**

1. English for the student of midwifery, ۲۰۱۰