

Cutting-Edge Challenges: How Work Stress and Age Affect Fertility and Pregnancy in Female Surgeons

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Abstract

In the modern world, due to pregnancy-related stigma, unmodified work schedules throughout pregnancy, short maternity leave options, and little support for postpartum childcare and breastfeeding requirements, female surgeons often delay starting a family until after training. This can result in an increased risk of infertility and pregnancy complications, especially as female surgeons spend their prime fertile years focused on their medical education and career. Additionally, female surgeons are more prone to stress and burnout, which can affect fertility. Offering extensive maternity leave and incentives, hiring more medical professionals to share the workload, and conducting informational sessions on the potential risks of delaying pregnancy could help address these challenges.

Keywords: Pregnancy, Infertility, Female Surgeons, Female Doctors

1. Introduction

In today's world, Women are emerging as surgeons in increasing numbers; in the US, they make up 21% of practicing surgeons and 38% of residents [1]. According to national surveys, pregnancy-related stigma, unmodified work schedules throughout pregnancy, short maternity leave options (typically 6 weeks or less), and little support for postpartum childcare and breastfeeding requirements are all common among surgical residents all over the world. Because of this, the majority of female surgeons wait until after training before beginning a family. When a woman reaches the age of 35 and receives the diagnosis of advanced maternal age, her chances of becoming infertile and having a difficult pregnancy drastically increase. Female surgeons are far more probable than their male peers to be childless, but little is understood about the dangers of infertility and pregnancy complications for female surgeons.

Many prior studies have reported the increased tendency of infertility and unfavorable pregnancy conditions for female physicians, compared to rest of the general population.

About one fourth of female physicians were diagnosed with infertility in a survey conducted by Natalie Clark et al [2]. Among them, female surgeons in particular are at an even higher risk [3]. A study involving female surgeons was conducted by Kim and

other researchers in July, 2021. It revealed that 42% of female surgeons experienced at least one pregnancy loss [4]. Several risk factors established to be associated with primary infertility such as high maternal age, employed status, stress, anxiety and physical inactivity are of common occurrence in the lives of female physicians, hence high infertility rates [5,6].

Female physicians spend their prime fertile age struggling for their medical education and try pregnancy way later compared to general women. The average age of first pregnancy among female physicians is 30.4 years [2]. 29.3% of infertility reports were due to reduced reserves of ovarian follicle. Female surgeon oncologists devote their age of fertility to training and establishing their careers, and thus many of them subsequently struggle with fertility when starting a family, making advanced age one of the leading causes of infertility in female physicians [7].

Long-term stress is another attributing factor to pregnancy complications and stress is no stranger to people in medicine. Burnout from long shifts, complicated patients, poor health outcome, job fatigue and dissatisfaction lead to emotional exhaustion in physicians. Female physicians are reported to be more prone to disturbed mental health and elevated stress owing to additional issues of bullying, workplace sexual harassment, and domestic commitments. Higher burnout ratio and four times

more susceptibility to suicide is reported in female physicians compared to their male counterparts [8,9]. A study by D E Stewart Et Al reported that 49% of women physicians have stress levels higher than usual [10]. These stress stimuli activate both the sympathetic-adrenal-medullary (SAM) and hypothalamic-pituitary-adrenal (HPA) which release hormones that cause an aberrant and protracted body set-up, eventually resulting in long-term neuroendocrine alterations that impact female fertility [11].

The increased physical activity showed a reduced risk of infertility in a study [6]. It influences the hypothalamic–pituitary–gonadal axis, the prime regulator of reproductive activity and the release of ovarian hormones in animals and humans. WHO have recommended a minimum of 150 min/week of vigorous-intensity aerobic activity for pregnant women [12]. Female physicians, especially surgeons, who have to stand on their feet in one place for hours during long operative procedures rarely get time for physical activity which contributes to their higher infertility rates.

The majority of challenges involved are because of the advanced maternal age. If women are offered extensive maternity leave along with additional benefits and incentives, they might genuinely consider conceiving and establishing their careers simultaneously. In order to accomplish this, more medical professionals could be hired to help share the workload. Furthermore, informational sessions on the potential risks of delaying pregnancy can be conducted more often to help create awareness among doctors.

Author's Contributions

Rahma Idrees: conception of the study, drafting of the work, critical revision of the manuscript, final approval, and agreeing to the accuracy of the work.

Manahil Mubeen: Conception of the study, drafting of the work, and agreeing to the accuracy of the work.

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