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## **Effect of psychological distress on the emerging cause of infertility**

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Faiza Kausar<sup>1\*</sup>

### **Abstract**

**Background:** Infertility is a growing issue of the recent era, and it represents significant crises for most couples. Psychological distress has often been suggested as a cause of unexplained infertility. Male infertility accounts for 40% of all infertility problems, while female infertility accounts for 40% of all infertility problems; others are unexplained. Previous studies have indicated that stress and depression negatively impact various infertility parameters in both partners. To determine the relationship between infertility and psychological distress and the level of different types of stress among infertile couples, and to relate the significant stressors responsible for worsening infertility or vice versa.

**Methodology:** This cross-sectional observational study was conducted on 50 couples. Data collection was done by the department of Gynaecology of Atia General Hospital Malir Kala board. Subjects were evaluated through a self-designed questionnaire, while stressors were assessed through a stress evaluation tool, i.e., Sadaf Stress Scale (SSS). Data were analysed using SPSS version 22.0.

**Results:** Results show stress levels in infertile couples, i.e., emotional, mental, psychosocial stress and chemical stress, elevated with some minor differences in both partners. Stress, and anxiety increase as the duration of infertility increases. Participants in our study had also experienced reproductive problems in their medical history, like a female with endometriosis, PCOs, pelvic infections and a male with low testosterone, and genital infections, so these reproductive problems can also worsen their stress level and infertility.

**Conclusion:** Infertility-related stress has direct and indirect effects on both partners, especially on mental health which can cause depression, anxiety etc. Although this study found more similarities than differences in how men and women experience infertility stress, the linkage between infertility stresses in men was surprising because men tend to report less anxiety. Stress and psychological factors are correlated with each other.

### **KEYWORDS**

Infertility, Psychological Distress, Sperm, Polycystic Ovarian Syndrome, Anxiety.

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## INTRODUCTION

Infertility is an inability to conceive children. It is a severe public health concern issue regarding financial, ethical, and legal aspects<sup>1</sup>. Infertility rates differ among different countries, from less than 5% to over 30%. Even though 40% of infertility are male-related, 40% are female-related, and 20% are related to both<sup>2</sup>. Infertility is of two types. Primary infertility is defined as no pregnancy attain after one year or more of regular unprotected sexual intercourse<sup>3</sup>. In contrast, secondary infertility is determined as the inability to become pregnant following a previous pregnancy<sup>4</sup>.

Some major causes of female infertility include anovulatory infertility, polycystic ovaries, endometriosis, tubal peritoneal infertility, uterine infertility, etc some significant causes of male infertility include Ejaculatory dysfunction, Varicocele, systemic and iatrogenic causes. One more factor that results in increased chances of infertility is diabetes. Under-weight or overweight both not only decreases pregnancy chances but also rises miscarriages risks. Moreover, overweight also decreases the sperm's quality in males.

Excessive smoking disturbs the functions of the ovaries and sperm's quality. Extreme alcohol consumption also disturbs production of sperms and increases female infertility. At times exposure to toxic occupational substances may play a role in infertility. Due to any surgery, trauma, infection, sperm may be abnormal, or twisting of the testes or epididymis, and complications linked to testes' descent might also obstruct sperms productions. Some medications can also weaken semen production e.g., cytotoxic drugs, testosterone, calcium channel blockers and long-acting sulpha drugs. Furthermore, the usage of anabolic steroids hinders sperms production and might leads to azoospermia that means a complete lack of sperm<sup>5</sup>.

The age of women is one of the most critical factors in the evaluation of infertility. A desire to become pregnant at ~40 years of age does entail a low possibility of success and an increased risk of developing maternal pregnancy ailments such as pre-eclampsia, hypertension and diabetes, and fetal chromosomal abnormalities and miscarriages. The decline in female fertility

starts at 30 years of age and becomes more pronounced at 40. The possibility of pregnancy at age 40 is half that of younger women, while spontaneous abortion doubles or triples<sup>6</sup>. Infertility is sometimes followed by existential crises and emotional tensions such as anxiety, depression, interpersonal problems and suppressed anger, unsatisfactory interpersonal, frustration, inferiority feeling, fear, rejected feeling, and unconscious guilt. These couples with a history of failure in the Assisted Reproductive Technique (ART) have shown personality disturbance<sup>7</sup>.

Cook et al. (1989) found that in couples involved in infertility treatment, both men and women showed increased anxiety levels compared with the general population as measured by the State-Trait Anxiety Inventory<sup>8</sup>. Psychological pressure has a significant effect on infertility. Society pressure and concerns about infertility have direct impact on the body's normal physiology and can have a double effect on fertility outcomes. All percentage of psychological problems in infertile couples ranges between 25 and 60%<sup>9</sup>. Psychological distress introduces to the general concept of disruptive psychological functioning in terms of stressful life events<sup>10</sup>. Any discomforting, emotional, depressing state experienced by an

individual in response to stress stimuli, either temporary or permanent, results in harm to the person<sup>11</sup>. Psychological distress has five attributes that are (1) perceived inability to cope effectively, (2) change in emotional status, (3) discomfort, (4) communication of distress, and (5) harm. Many of the stress stimuli originate in the environment. Some arise from the individual's response to environmental factors. Some are psychogenic and, in some instances, may be the result of the interaction of what the individual perceives from the environment and the elicited response. Any behavioural differences, either cultural or occupational, can transform or sensitize the stress response and change reproductive function. As the duration of infertility increases, stress also increases<sup>12</sup>.

Physical Stress occurs due to any exercise, cuts, burns, sprains, broken bones, surgery, pregnancy etc. Traumatic stress occurs because of any traumatic event. Nutritional stress occurs due to deficiency or excess of nutrients or more. Emotional stress occurs due to the long-term interruption of any emotion. Mental stress occurs due to several intellectual tasks. Psychosocial stress occurs due to the pressures of society. Chemical stress occurs due to any chemical drug abuse<sup>13</sup>.

Although infertility is an unexpected circumstance that carries both emotional and psychosocial impacts of different intensity for both individuals and couples, infertility research focuses more on the woman and her experience<sup>14-16</sup>. Except Phipps (1993), few studies have described the male experience with infertility or examined the similarities and differences in partners' infertility experience<sup>17</sup>. Based on the study's findings, the researchers suggested that women show more stress and weak adjustment to being infertile than men and that women tend to view reproduction as a more leading component of their gender role identity. There are groups of patients whose infertility remains unexplained after completing all available diagnostic tests, and no physiological or pathological causes are found<sup>18</sup>. Thus, for these groups of patients, some may dispute that perhaps "psychological" factors may cause their infertility<sup>18</sup>. In terms of psychological states such as depression, anxiety, fear, anger, etc., they all impact the physiological system, including endocrinological functioning; therefore, it decreases the possibility of conception<sup>19</sup>. Some authors believed that infertility is a symptom of total personality disturbance<sup>20</sup>.

## **METHODOLOGY**

This cross-sectional observational study was conducted on 50 couples. Data

collection was done from the Department of Gynecology of Atia General Hospital Malir Kala-board. Only married and any other chronic disease-free teams were included, while unmarried or any couple with chronic disease was excluded. Informed consent was taken from all the participants. Subjects were evaluated through a self-designed questionnaire, while stressors were assessed through a stress evaluation tool, i.e., Sadaf Stress Scale (SSS)<sup>13</sup>. This tool can be a vital instrument to evaluate different types of stresses in an individual with the help of sign that forms the questionnaire's root. The scoring of stress count can be useful in analysing the severity of patients. Patient's demographic data were collected using a questionnaire which includes name, age, height, weight (before and after marriage), occupation, qualification, socioeconomic status, marital age etc. The questionnaire also includes medical materials like hormonal imbalance, infection, any other disease, family history of the disease, self-history etc. SPSS was used statistical analysis and data were presented as frequency and percentages.

## **RESULTS**

Fifty infertile couples were included in this cross-sectional observational study. The mean age was  $31.3 \pm 5.9$  years. Infertility diagnosis aspects related to female was 14% female diagnosed with endometriosis,

24% diagnosed with PCO'S and 24% diagnosed with any of pelvic infection. Infertility diagnosis aspects related to males were 48% male diagnosed with low

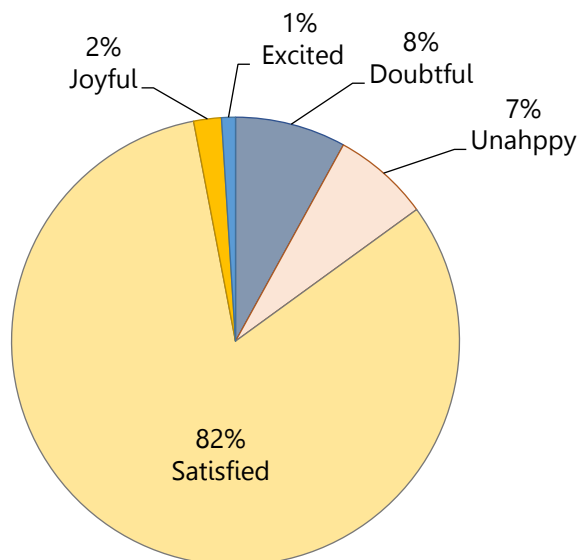
testosterone, 6% diagnosed with testicle infection, and 8% diagnosed with the urethral infection.

**Table 1: Demographic characteristics of the study population**

<b>Variables</b>	<b>Sub-Categories</b>	<b>n=50 couples</b>
<b>Gender</b>	Male	50
	Female	50
<b>Age (Years)</b>		31.3±5.9
<b>Marital Age (Years)</b>		26.58±5.1
<b>Weight Before Marriage (kg)</b>		61.16±11.57
<b>Current Weight (kg)</b>		69.31±12.6
<b>Height (Ft ‘in’)</b>		5.37±0.25
<b>Qualification</b>	Secondary	15
	Higher Secondary	25
	Graduate	42
	Postgraduate	17
<b>Socioeconomic Status</b>	Lower Class	0
	Middle Class	98
	Upper Class	2
<b>Employment Status</b>	Working	15
	Non-Working	41
<b>Social Status</b>	Normal	69
	Anti-Social	26
	Social Butterfly	5
<b>Lifestyle</b>	Sedentary	20
	Active	71
	Very Active	4
	Don't Know	5
<b>Health Status</b>	Excellent	5

	Very Good	16
	Good	45
	Fair	23
	Poor	11
<b>Family History</b>	Diabetes	37
	CVD/BP	38
	None	39
<b>Self-History</b>	Diabetes	7
	CVD/BP	3
	None	87
<b>Allergic To Anything</b>		30
<b>Any Surgery</b>		27
<b>Substance Abusers</b>	Beetle Nut	5
	Pan	4
	Tobacco	3
	Cigarette	14
	Cold Drink	27
<b>Medical Diagnosis (Female)</b>	Endometriosis	7(14)
	PCO'S	12(24)
	Pelvic Infection	12(24)
<b>Medical Diagnosis (Male)</b>	Low Testosterone	24(48)
	Kidney Infection	7(14)
	Testicle Infection	3(6)
	Urethra Infection	4(8)
	Smoking	15(30)

\*PCO'S-polycystic ovarian syndrome; BP-Blood Pressure; CVD-cardiovascular disease



**Figure 1: Ratio of Satisfaction about their life**

The above figure shows a ratio of satisfaction that 8% people thought they were doubtful, 7% thought they were unahppy, 82% thought they were satisfied with their life, and 2% thought they were joyful. Only 1% thought they were excited in their life. The table below shows the level of different stresses in males and females. It shows that emotional, mental, and psychosocial stresses are elevated in both males and females.

**Table 2: Level of different types of stresses**

Types Of Stresses	Mild		Moderate		Normal		Severe	
	Male	Female	Male	Female	Male	Female	Male	Female
<b>Physical Stress</b>	15(30)	17.5(35)	2.5(5)	1.5(3)	7.5(15)	6(12)	-	-
<b>Traumatic Stress</b>	9(18)	6(12)	3(6)	4.5(9)	11(22)	13(26)	2(4)	1.5(3)
<b>Nutritional Stress</b>	6.5(13)	8(16)	-	-	18.5(37)	17(34)	-	-
<b>Emotional Stress</b>	19(38)	18(36)	1(2)	1.5(3)	5(10)	5.5(11)	-	-
<b>Mental Stress</b>	21(42)	21.5(43)	1.5(3)	0.5(1)	2.5(5)	3(6)	-	-
<b>Psychosocial Stress</b>	22(44)	21.5(43)	2(4)	1.5(3)	1(2)	2(4)	-	-
<b>Chemical Stress</b>	17.5(35)	15.5(31)	1(2)	1(2)	6.5(13)	8.5(17)	-	-

\*Values are given as n (%)



## **DISCUSSION**

Infertility is considered a significant crisis affecting not only the psychosocial health of couples but also their physical health. It has a stressful effect on the couple, which adversely affects their quality of life too. Men and women exhibited similar patterns in the way related to expressing their stress<sup>21</sup>.

Patients who participated in this study were from different geographical areas. The finding of this study provides information about the intensity and severity of various stresses in infertile couples concerning the duration of infertility. Stress can lead to the disturbance of mental health, which ultimately disrupts homeostasis and causes reproductive problems<sup>22</sup>.

The percentage of mental stress in our result was 11% normally affected, 4% were moderately affected, while 85% were mildly affected by mental stress. Different variables related to high-stress levels in the "social relations" areas stood being a woman, having infertility problems, and reflecting regular marital relationship quality. While within the "children lacking life" domain, different variables that lead to higher stress levels stood being a woman, age ranges from 18 to 24 yrs., along with having infertility problems. Whereas being a man is to think through adoption, parents

or in-laws and people expressing the struggle for becoming pregnant and consider the excellent quality of the marital relationship are the various variables related to a higher level of stress in "marital or sexual relationship" area<sup>23</sup>. Not having a child is generally experienced as unpleasant and stressful for both partners, mostly due to social pressure. The percentage of psychosocial stress in our result was 6% normally affected, 7% who moderately affected, while 87% were mildly affected by psychosocial stress. This study shows that 82% of people thought that they were only 60% satisfied with their life.

Previous studies show that women are more stressed than men for not having a child, but this study shows that men are also stressed. This study shows stress, i.e., emotional, mental and psychosocial stress, is elevated with some minor differences in both partners<sup>24</sup>. Stress, anxiety increases as the duration of infertility increases. Participants in this study had experienced reproductive problems in their medical history, like some of the female diagnosed with endometriosis, PCO's, pelvic infection, etc. Some of the males diagnosed with low testosterone, genital infections etc., and so these reproductive problems can also worsen their stress level. For instance, the adverse effect of endometriosis on psychological health has

widely been revealed by extensive research literature, together with the fact that the severity and presence of pelvic pain are strongly associated with depression and anxiety. Though endometriosis is a complicated multidimensional ailment and causes other than pelvic pain, includes distinct differences, it might explain the variabilities in women's emotional/psychological health<sup>25</sup>. In this study, we found 14% of females diagnosed with endometriosis, 24% diagnosed with PCO's, 24% diagnosed with pelvic infection having mental stress or lies under psychological stress because of these sufferings.

Medical examination for infertility can be started whenever pregnancy hasn't been initiated until 1 year of continuous unprotected intercourse. Sometimes, medical consultation must be started even before one year in case the female has a history of either amenorrhea or complete absence of a menstruation. Initially, those investigations must be done for both partners instantaneously at general health care centres. The nurses will chart sexual and gynaecological history of the couple<sup>26</sup>. Earlier to infertility treatment, couples go

through medical investigations that hopefully showed the origin of infertility. Later, treatments must be planned as per couple's wishes. Before treatment commencement, all possible options should be discussed along with the treatments that fails must be approached. Typical treatments involve hormonal, surgical (removing myomas, endometriosis) and assisted reproductive treatments (insemination and in vitro fertilization – IVF)<sup>27</sup>.

## **CONCLUSION**

Infertile couples experience a higher stress level that has devastating effects, especially on their mental, emotional, and psychosocial conditions. Additionally, infertility-related stress has direct and indirect impact on both partners. Although this study found more similarity than difference in how men and women experience infertility stress, the linkage between infertility stresses in men was surprising because men tend to report less stress. Adequate attention to those patients psychologically and treating them properly is of great importance for their mental health and improving their quality of life.

**Conflict of Interest:** None

**Funding Sources:** None

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