

## **Risk factors associated with subfertility among Palestinian men in Gaza**

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**Abstract :***Background: Although Gaza strip is considered as one of the most densely populated areas in the world, so many couples are suffering from infertility, infertility in eastern Islamic society is considered incorrectly as a curse and always the woman is the one to blame. Objective: The present work aims to identify the risk factors associated with infertility among Palestinian men in Gaza, Palestine. Methodology: Five hundred and twenty seven couples (527) were included in the study group. These cases were the number of couples attending to Al Basma fertility centre in Gaza, seeking for clinical help from infertility, During the period from 2006-2010, data was collected from the files of those couples and the possible cause of infertility was identified. Results: It was shown that out of the 527 cases, the cause of infertility in 278 of the cases (52.6 % ) was related to the woman (in press), and in 225 of the cases ( 42.4%) infertility was related to man. while, in 24 cases (4. 55%), the cause was related to both Moreover, among the cases where infertility is related to man 50 cases (20%) were compound and multiple risk factors could be involved in infertility. Conclusion. The present study presents men infertility as a public health problem in Gaza, and multiple risk factors could attribute for infertility which justifies the necessity for comprehensive evaluation of men infertility among different geographical locations as well as among men with different occupational settings.*

## Introduction

The inability to have a child is considered a personal tragedy with considerable suffering for both partners, this may have negative implications on the entire family and even on the whole local community, and may lead to severe psychosocial consequences (1,2). In many cultures, womanhood is defined through motherhood, and infertile women usually carry, wrongfully, the responsibility for couple's inability to conceive or having a baby. Childless women are commonly unfortunately stigmatized, isolated, disregard, and disrespect (3-6). The production of healthy sperms and eggs from the male and female reproductive organs is the most important step among different biological steps that are required for conception to take place. Infertility is defined as the inability of a woman to conceive after at least one year of regular sexual unprotected intercourse, and can be related to the man or to the woman or to both (Bergstrom, 1992; Leke et al. 1993).

A high rate of childlessness is considered as one of the most important and underappreciated reproductive health problems in developing countries and specially Middle Eastern (7,8). The world health organization (WHO) estimates that there are about 60-80 million infertile couples worldwide with the incidence of 20% in Eastern Mediterranean region and 11% in the developed world (9,10). In Palestine there is no documented reports or published scientific data that investigated the degree and etiological risk factors associated with infertility. But according to the Palestinian Central Bureau of Statistics fertility rate declined from 6.0 births per woman in 1997 to 4.6 births per woman in 2004 (11). We believe that the high prevalence of childlessness issue world wide and especially in developing countries should attract the attention of researchers, and we think that the key issue in investigating this problem is the identification of the etiological risk factors associated with infertility among men and women. Studying those risk factors may be the

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beginning for a successful treatment and problem solving for so many cases.

Therefore, we set up the present work aiming to identify the etiological risk factors associated with infertility among Palestinian men in Gaza.

### **Materials and methods**

Five hundred and twenty seven couples suffering from infertility and referring to Al Basma fertility center in Gaza, covering the period from January 2006 to May 2010 were studied comprehensively and the causes of infertility were identified. The risk factors associated with female infertility are in press, so in the present work we will present those risk factors associated with male infertility using the following tools and investigations.

The couples were divided into 3 groups: group1, group 2, and group 3. the characteristics of each group as follows:

**Group 1:** If the cause of infertility is related to woman (this case was addressed in another study (under publication).

**Group 2:** If the cause of infertility is related to man

**Group 3:** if the cause of infertility is referred to both man and woman.

The causes of infertility related to man are studied comprehensively and the risk factors associated with infertility among men are identified.

### **Study tools**

#### ***Questionnaire interview***

Part of data was collected by using close-ended questionnaire which was constructed and conducted in Arabic language. The questionnaire was designed to include major components: socio-demographic and general characteristics; medical profile; other health characteristics; health complains and medical history of the subjects.

### **Urology examination**

An urologist evaluated the anatomical picture and size of both testes for the occurrence of any damage or blockage of seminal tubes. Also, examining the prostate gland for the presence of fibroids using ultrasonography (Aloka SSD-1000 ultrasound, Aloka, Tokyo, Japan). Semen analyses including sperms count and vitality were assessed microscopically according to the standard protocols

### **Pelvic infection**

A gynecologist evaluated reproductive and urinary tract infection using fresh urine and ejaculated semen at the microbiology lab, using culture technique.

### **Hormonal analysis**

Sex and thyroid hormones essay were made, including Prolactin (ST AIA-PACK PRL), follicle stimulating hormone (FSH) using (STA AIA-PACK FSH), luteinizing hormone ( LH) using (ST AIA-PACK LH II), testosterone using (ST AIA-PACK TESTOSTERONE) , and thyroid stimulating hormone (TSH), using (SA AIA-PACK TSH) according to the manufacturer instructions.

### **Results:**

Table 1 shows that in 52.8% of the study population the cause of infertility is related to woman, while in 42.7% of the infertile couples the cause is related to man, in 4.5% the cause is related to both.

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**Table 1: the different groups of the study population**

<b>Group</b>	<b>Group definition</b>	<b>No.</b>	<b>Percentage</b>
Group 1	cases where infertility is related to woman	278	52.8
Group 2	No. of cases where infertility is related to man	225	42.7
Group 3	No. of cases where infertility is related to both woman and man	24	4.5
	<b>total</b>	<b>527</b>	<b>100</b>

Table 2 shows that hormonal problems is the cause of 7.6% of the infertility related to man, while in 51.8% of the cases the cause of infertility is related to seminal problems, and Azospermia is the major cause (22.9%), followed by oligospermia. Ejaculation problems account for 3.6% of the cases, vaicocele account for 10.1% of the cases, Infection account for 6.8% of the cases, the remaining 20.15% is related to more than one cause and was called compound infertility.

**Table 2: Cause of infertility that related to man.**

Cause of infertility	No.	Percentage
<b><i>Hormonal problems</i></b>		
hyperprolactinemia	10	4.0
Hypogonadotroic hypopituitarism	9	3.6
<b><i>Subtotal</i></b>	<b>19</b>	<b>7.6</b>
<b><i>Seminal problems</i></b>		
Azoospermia	57	22.9
Oligospermia	44	17.7
Semen OTA	11	4.4
Asthenospermia	11	4.4
Damaged sperm ducts	6	2.4
<b><i>Subtotal</i></b>	<b>129</b>	<b>51.8</b>
<b><i>Ejaculation problems</i></b>		
Premature ejaculation	7	2.8
Retrograde ejaculation	1	0.4
Ejaculatory incompetence	1	0.4
<b><i>Subtotal</i></b>	<b>9</b>	<b>3.6</b>
Vaicocele	25	10.1
Infection	17	6.8
Compound infertility (due to more than one cause)	50	20.1
<b>Grand total</b>	<b>249</b>	<b>100</b>

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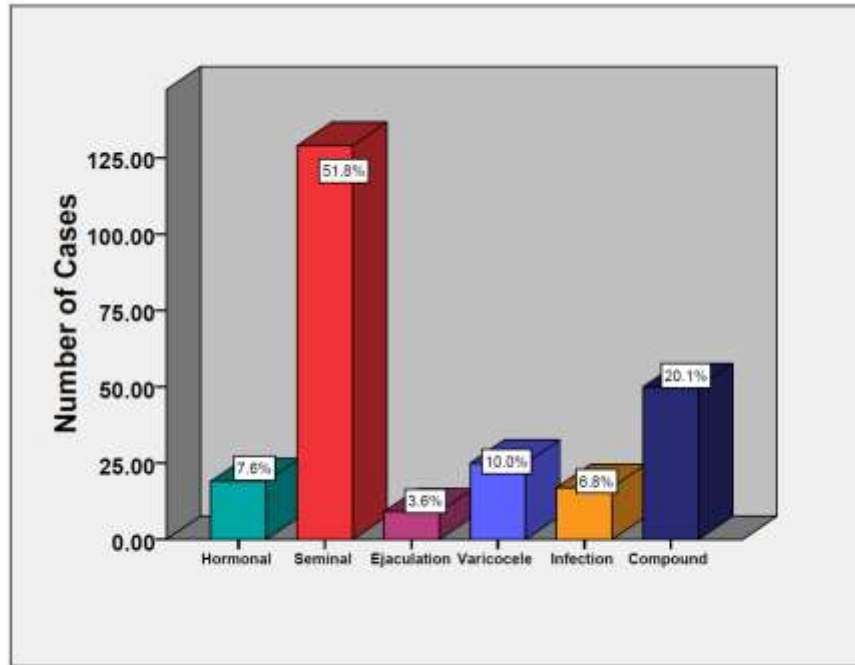


Table 3 summarizes the causes of infertility into 4 groups, where hormonal and seminal problems account for 20% of the cases, infection and seminal problems account for 32%, multiple seminal problems account for 32%, and varicocele and seminal problems account for 16% of the compound causes.

**Table 3: Distribution of risk factors among compound infertility**

Compound infertility	Percentage	No.
Hormonal and Seminal problems	10	20.0
Infection and Seminal problems	16	32.0
Multiple Seminal problems	16	32.0
Varicocele and Seminal problems	8	16.0
<b>Total</b>	<b>50</b>	<b>100</b>

## Discussion

Our results show that the cause of infertility in (52.8%) of the studied cases is related to female reasons, while (42.7) is related to male reasons, and (4.3%) is related to both. These results are very close to the results obtained by Multigner and Olivia (2001), and by Kocelak et al (2012) in different setting **(12,13)**.

According to this study seminal problems (51.8%), vaicoccele (10.1%), hormonal problems (7.6%), infection(6.8%), and ejection problem (3.6%) are the five major risk factors associated with infertility among men in Gaza. In their research article, Kocelak et al (2012) showed that erectile dysfunction, hormonal disturbances and lower semen quality, are the three major causes of man related infertility, which is in agreement with our findings **(13)**.

We suggest that in the course of treatment plan of the infertile couple and when the cause of infertility is related to man doctors should concentrate on obtaining clear picture about semen quality and count, the presence of vaicoccele, hormonal analysis, genital and urinary tract infection, and erection and ejection status, account for almost all risk factors associated with infertility among men in Gaza. Studying these issues will give clear picture about each single case and help shortening the period of treatment. Infertility and its therapy with accompanying psychological disturbances may also significantly affect the partners relationships and cause hormonal disturbance and poor quality semen **(14,15)**.

We recommend that psychological evaluation and consequently psychotherapy should be included in management of infertility, such an approach will improve the effectiveness of infertility therapy and prevent development or worsening mood disorders in infertile men **(13)**.



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