

## Coping Strategies among first Infertile Couples undergoing In-vitro Fertilization

Rasha Mohamed Hassan Eltelt<sup>(1)</sup>,

*1Women Health and Maternity Nursing, Faculty of Nursing, Kafr El-Sheikh University, Egypt*

*Corresponding Author: Rasha Mohamed Hassan Eltelt*

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### **Abstract**

**Background:** Infertility problems have become a public health concern throughout the world. In recent years, there has been an increase in publicity about infertility and reproductive medicine technologies especially In-Vitro Fertilization (IVF).

**Aim** of the study is to assess different coping strategies among first infertile couples undergoing in-vitro fertilization.

**Design** A descriptive research design.

**Setting:** the study was conducted at Center of the eye offertility and microscopic injection in Mahalla Al - Kubra center as private sectors.

**Subjects:** A convenience sample composed of 100 couples, from the previous setting.

**Tools:** of data collection:

**Tool I:-**Interviewing questionnaire sheet, It was composed of two parts,

**part one:** socio-demographic data for couples,

**part two:** Assess the previous diagnostic tests for infertile couple.

**Tool II:** Stressors assessment sheet according to the original sheet.

**Tool III:** Coping strategies assessment sheet

**Results&Conclusion:** the study revealed that wives perceived stressors more than the husbands among different types of stressors (physiological, psychological, and socioeconomic) .the couple are similar in using the positive coping manners, while concerning negative manners, they are used more by wives than husband, however compared the use of positive and negative manners are more used than negative once which include pray, and surrender to fate. Finding showed that the positive outcome of the cycle increase with low stressors and high coping level.

**Recommendations:** Couples should be counseling about ART and its steps, should be given before starting treatment and Assess the stressors and coping levels in each stage of the IVF procedure and their effects.

**Key words:** Coping Strategies, Infertile Couples, In-vitro Fertilization.

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### **I. Introduction**

Infertility is defined as not being able to get pregnant (conceive) after one year (or longer) of unprotected sex. Because fertility in women is known to decline steadily with age, some providers evaluate and treat women aged 35 years or older after 6 months of unprotected sex. Although estimates of its prevalence are not very accurate and vary from one region to another, about 8% of couples experience some form of infertility problem during their reproductive lives.<sup>[1]</sup>

Infertility is a case of unexpected loss for the women, their husbands, and their families. This situation requires adapting oneself to a life without children and coping with difficulties to avoid this stress and life crisis, individuals start searching for treatment alternatives, and most of the time, Assisted Reproductive Technology (ART) is thought to be the solution. When they first start the treatment, couples expect the treatment to be successful and hope they will become pregnant.<sup>[2]</sup>

Infertile couples may have been exposed to conditions that contributed to their fertility. Lifestyle, diet, sexual health, substance abuse, and psychosocial factors influence not only the outcome of fertility treatment, but also pregnancy health, which is central to preconception care. Couples presenting to fertility clinics are highly motivated to achieve pregnancy; this offers a rare opportunity to offer preconception education/counseling and improve their chances of success.<sup>[3]</sup>

Worldwide, the prevalence of infertility is approximately 14%, with the range from 7-28%, depending on the age of the woman. In-Vitro Fertilization) (IVF) is used to treat many causes of infertility, only 5% of couples actually use it. Woman less than 35 years of age may suffer from infertility factors such as blocked,

damaged or lack of fallopian tubes, significant semen abnormalities, or moderate to severe endometriosis. Couples who simply can't conceive and have tried other infertility methods that have not worked for them try IVF. In-Vitro fertilization involves four basic steps; ovarian stimulation, egg retrieval, insemination, and finally embryo replacement of the woman's uterus to establish a successful pregnancy.<sup>[4]</sup>

The purpose of IVF counseling is to help a couple cope better with all these emotions and to avoid being overwhelmed by them. The idea is to help the couple fully comprehend the implications of IVF treatment, to provide emotional support and information during the treatments, and to enable the couple to cope with the results of the treatment whatever they may be.<sup>[5]</sup>

Coping with stress refers to an individual's resistance to a case they consider to be a stressor, argue that the increasing level of anxiety and infertility distress during treatment has a negative influence on pregnancy rates. It has been reported that anxiety increases in the infertility treatment process and decreases with the use of effective coping methods. The most important point to be taken into account to decrease anxiety in the infertility treatment process and in case of failure of the treatment is not only to prepare couples for the infertility treatment process and for the possible failure of the treatment, but also to help them cope with this effectively.<sup>[6]</sup>

Coping strategies for couples suffering from infertility are important to help them to identify areas of stressors in their life and how to cope with stressors. Various methods for stress management such as progressive relaxation of muscles and follow up activates are of benefits in facing stressful situation.<sup>[6]</sup>

The nurse must be willing to learn, compassionate, empathetic, a good "hand holder," a good listener, provide education, counseling and emotional support during a trying time, to guide and give health education to those couple. She should review the literature on reproduction medicine, including basic anatomy, menstrual cycle, and hormone levels reviews specific protocols, procedures, and patient consents specific to the IVF clinic. Moreover, she should understand that the world of infertility is challenging, exciting, rewarding and continually expanding and changing to meet the demands of couples undergoing IVF.<sup>[7]</sup>

### **1.1 Significance of the Study**

Infertility problems have become a public health concern throughout the world. In recent years, there has been an increase in publicity about infertility and reproductive technologies especially In-Vitro Fertilization (IVF), which has given some way to reduce both the stigma of infertility and the reluctance of couples to seek advice.<sup>[8]</sup>

In Egypt, **Mohsen et al.**<sup>[9]</sup> reported that the prevalence of the primary and secondary infertility was 3.6% and 9.8% respectively; also, they added that, the overall prevalence of infertility is 15.6%. In normal fertile couples having frequent, timing intercourse, the success of conception is estimated to be approximately 20-25%. Approximately 90% of couples with unprotected intercourse will conceive within one year.

Infertility has a profound physiological, psychological and socio-economic impact on affected couples and society<sup>[10]</sup>. According to statistics collected by the **CDC**<sup>[11]</sup> reported that 6.1 million women between the ages of 15 to 44 years have an impaired ability to have children, and 2.1 million married couples are experiencing infertility, also, statistics found that 9.2 million women had made use of infertility services at some time in their life early detection of problems that may predispose to infertility.

### **1.2 Aim of the study**

The aim of this study was to assess different coping strategies among first infertile couples undergoing in-vitro fertilization through:

- Identifying physiological, psychological and socio-economical stressors which may affect the result of IVF.
- Assessing coping strategies used by the couple to relieve these stressors.

### **1.3 Research Question:**

- What the physiological, psychological and socio-economical stressors which may affect the result of IVF?
- Assess coping strategies used by the couple to relieve these stressors?
- Relation between stressor level and coping level among wives and husbands?
- Relation between coping levels adopted by wives and husbands and their socio-demographic characteristics?

## **II. Subjects and methods**

### **2.1 Research design:**

A descriptive research design has been utilized in this study.

### **2.2 Research setting:**

The study was conducted at Center of the eye of fertility and microscopic injection in Mahalla Al - Kubra center as private sectors. Center of the eye of fertility and microscopic injection in Mahalla Al -

Kubra. This is a private center located at Mahalla Al -Kubra district. It consists of 7 rooms as follows: Waiting room, interviewing room, lab room, which contains the IVF incubator, three rooms for clients rest after egg retrieval and embryo transfer, operating room which is a sterile room where attendants have wear sterilized uniform (gown, mask, overhead and overshoes, etc.)

### **2.3 Subjects:**

One hundred couple fulfilling the study criterion were included in the study. Selection of sample size was based on assessing the center flow rate. Flow rates in center were 1000 according to the years 2017 statistics.

### **2.4 Sampling technique:**

A sample of convenience technique was used based on: primary infertility criterion.

**Sample size:** one hundred couple fulfilling the study criterion were included in the study. Selection of sample size was based on assessing the center flow rate. Flow rates in center were 1000 according to the years 2017 statistics

### **2.5 Tools of data collection:**

**Tool I: Interviewing questionnaire sheet:** A structured Arabic interviewing questionnaire was designed by the researcher, after reviewing the related current and previous literature, to collect data which cover the aim of the study. It consisted of three parts as follows:

**Part I:** It was used to assess the socio-demographic characteristics of the study as age, residence, educational level (wife & husband), occupation (wife & husband), and family income.

**Part II:** It was used to assess the previous diagnostic tests for infertile couple and previous trial for any assisting reproductive technology and its result.

**Tool II: Stressors assessment sheet** according to the original sheet was designed by **Fraster and cooper**<sup>[12]</sup> who investigated the different types of stressors experienced by the infertile couple, the sheet contains 64 items was divided into 3 parts as follows:

**Part I:** It is systematically prescribing the physiological stressors of each body's systems of the infertile couple. Gastrointestinal and urinary system, stress symptoms. This part contains 38 items.

**Part II:** It was used to assess psychological stressors facing the infertile couple undergoing IVF as loss of interest, nightmares, change in responsibilities and activities etc. this part contains 20 items.

**Part III:** It was used to assess the socio-economic stressors which affect the infertile couple undergoing IVF as social relation, support economic consequences of infertile couple also medication costs, their reflection upon the couple daily living condition and work. This part contains 6 items.

### **Scoring system of the stressors assessment sheet:**

The sheet consisted of 64 stress response items, each item was given one score. The scoring system was as follows:

- The couple who had sum of the score equal to or less 33.3% of the total assignment as low stressors level.
- The couple who had sum of the score 33.4-66.6% of the total assignment as moderate stressors level.
- The couple who had sum of the score 66.7-100% of the total assignment as high stressors level.
- Level assignment as eventually distribution among 100 couples

**Tool III: Coping strategies assessment sheet:** The coping assessment sheet adopted from **Lee et al.**<sup>[13]</sup> modified by **Tosson and Mohamed**<sup>[14]</sup> which included (68 items). (a). modified according to the opinion of jury of expertise 3 from obstetric and gynecological, 3 from Maternity Nursing and 3 from Psychiatric Nursing, some items were excluded (22) as they were already included in stressors sheet assessment. The new sheet included 46 and divided into :-positive manners, which contains 25 items, and negative manners, which contain 21 items.

### **Coping strategies scoring system of sheet:**

- The couple who had sum of the score equal to or less 33.3% of the total assignment as low coping stressors level.
- The couple who had sum of the score equal to or less 33.3 – 66.6 % of the total assignment as moderate coping stressors level.
- The couple who had sum of the score equal to or less 66.7 – 100.0 % of the total assignment as high coping stressors level.
- Level assignment as eventually distribution among 100 couples.

## **2.6 Pilot study:**

A pilot study was conducted on 10% ( 5 couples) to test the content, clarity and time needed to fill the tool as a pre-test. According to the pilot study, no modification was done. So, the pilot study sample was included in the study sample.

## **2.7 Fieldwork:**

After official permissions to carry out the study, the aim of the study was explained to the selected subjects. The study was carried out along a period of 7 months starting from the beginning of January 2017 till the end of June 2017 until the sample size attained. The average time consumed to fill tool was 30 minutes. The previously mentioned settings were visited by the researchers two days/week (Saturday and Thursday) from 10.00 am to 2.00 pm.

## **2.8 Ethical considerations:**

Each couple was informed about the purpose and benefits of the study, and then oral consent was obtained before starting the data collection. Strict confidentiality was ensured throughout the study process. The study subjects were assured that all data was used only for research purpose and couples were informed of the rights to refuse or withdraw at any time with no consequences.

**Validity** of the tools: Content validity was done through five experts from Faculty Members of Community, obstetric Health Nursing department and Medical Specialty to ascertain relevance and completeness.

**Reliability:** Reliability coefficients were calculated for questionnaire items. The coefficient alpha was 76.00 %.

## **2.9 Data management:**

The collected data were organized, categorized, tabulated and analyzed. Data were presented in tables and charts using numbers and percentage, statistics and associations were done using mean, standard deviation SD, t- test and p- value, Significant of the result: no Significant if  $p > 0.05$ , Significant if  $p < 0.05$  and Highly Significant if  $p < 0.001$ .

## **III. Results**

**Table 1** Shows the socio-demographic characteristics of the study sample. As regards age, the wives mean age was  $31.4 \pm 4.8$ , while for husbands; it was  $36.5 \pm 5.1$ . As for wives, regarding couple education, 42.0% for wives and 53.0% for husbands were university or more education. Concerning Occupation, 75% were housewives, while 44% of men were employees. Regarding the residence, 63% of the couples were residing urban areas, 30% of them reported that income was not enough to cover treatment cost. **Fig. 1** shows that, 28.0% of them were married for a period of  $\geq 7-10$  years and 36.0% of them were married for more than 10 years.

**Table 2** displays obstetric history of study group. it shows that 35% of them had irregular menstrual cycles and 69% of them were suffer from obstetric problems and the major of these problems was PCO (28%). As regards men seminal analysis, it was abnormal for 73% of them, and the major abnormality was low count and motility (56.1). However, 25% of men experienced testicular biopsy and the majority (76%) had few sperm.

**Table 3** represents the diagnostic and surgical investigations and treatment of the studied wives. Results showed that 55.1% of the wives had abnormal X-ray result. Cases observed with tubal block and adhesion represents 39.7%. Only 14% of the wives have done previous surgery for infertility and the most type of surgery was endometrium biopsy (35.7%). Diagnostic laparoscopy showed that 60% of the wives had abnormal result, mainly in tubal block or adhesion (28.9%). less than two thirds (63%) of the couples undergone previous ART trial, while 61% of the present IVT couples succeeded by having positive results for the new one.

**Table 4** Shows the frequency of cardio-respiratory stressors among the infertile couples undergoing IVF in the study couples: The major complaining from cardio-vascular stressors were presented follows: headache (84% for woman & 42% for men), followed by tachycardia (58%) for woman and perspiration (27%) for men. As well the majority of respiratory stressors presented were dyspnea (29%) for woman and chest tightness (16%) for men. With overall the main symptoms for couples regarding cardiovascular system was headache (63%) while concerning cardio-respiratory stressors, the wives more stressors than husbands.

**Table 5** represents the frequency of the different forms of somatic, gastro-intestinal and urinary stressors among wives and husband of the study sample. The most common complain among somatic stressors were presenting in generalized pain 74% for wives, while 38% of the husbands had difficulty falling into sleep. The most common GIT stressor were obvious in nausea and vomiting 50% for wives while representing in husbands in heart burn 16% .As for urinary stressors, the frequency of micturition and urinary urgency were the most common among couples (9% & 8% for husbands 9% & 7% for wives respectively). Finding showed that

the wives suffer somatic and GIT stressors more than husband .while the couple suffer from urinary stressors respectively.

**Table 6** presents the most common forms of psychological stressors among the studied couples .They represented 75% for wives 64% for husbands for fear of unsuccessful treatment, followed by fear from future 69% for wives 57% for husbands and easily exhausted representing in 66% for wives and 51% for husbands complain continued fear and worry .This finding refer to the women suffer from psychological stressors more than the husbands.

**Table 7** the above table represents the frequency of socio-economic stressors among the study group .They were present in the form of high cost of treatment for wives and husbands 74% for wives and 67% for husbands, followed by change in life style 67% for wives and 55% for husbands .However, the wives suffer from socioeconomic stressors more than the husband.

**Table 8**this table represents total stressors level among wives and husbands in the study sample. The table shows that, according to total physiological stressors from the husbands had low stressors level 94% more than wives 88%. As total psychological stressors the husbands had low level 78% more than the wives 62% and regarding to socio-economic stressors the husband had low level 54% more than wives 43%.

**Table 9** represents negative coping methods which were used by the infertile couples undergoing IVF to relieve these stressors. The most common negative coping patterns used by the women were isolation, less talking with partner, and spend time in dreams and imagination representing with the same percent 53%. However, for men they were less talking with partners, and change talking when others talk about the problem that represent with the same percent 36% .On the other side the negative methods which were not done by the women were escape from carrying out doctor instructors 88%, while for men, they were force partner to solve the problem, think about divorce with an equal percent 88%.

**Table 10** the previous table shows the positive coping methods which were used the infertile couples undergoing IVF to relive their stressors, The most common positive coping patterns used by the wives were pray representing 98%, surrender to fate representing 96%.The positive coping methods used by the husbands were surrender to fate 95% , pray 94% and hope for success the treatment 93%.

**Table 11**this table shows that 65.5% of the couples in the study group had highly positive coping with the stressors affecting them, while 87.5% of the couple in the study group had highly negative coping with their stressors. No statistically significant difference was found regarding to positive and negative coping among wives and husband.

**Table 12**this table identifies the relation between coping and stressors level. The table indicates that 73% of wives 75% of husbands who had low physiological stressors had high coping, while 53% forwives 61% of husbands, who had low psychological stressors had high coping. As for 35% of wives and 42% husbands who had low socioeconomic stressors, they had high coping. However, no statically significant relation between forms of stress affecting the couples and their coping level were detected.

**Table 13**represents the relation between the socio -demographic characteristics of the study group and their coping level. The table identifies that, 58% of the wives in the study sample with age less than 35 years had highly coping level, while 53% of the husbands 35 years or more had highly coping level. The majority of the highly educated couples had highly coping level representing (57% for wives -60% for husbands). The couple in the study sample living in urban area and higher coping level those living in rural areas representing 53% versus 27% .As for couples with moderate income, they had highly coping level compared to those having had low and high income accounting for 38%.The couples married for 8 years or more having highly coping level exceeded those who are married for less than 8 years were representing 31% . However, no statically significant relations between levels of coping and socio -demographic characteristics were found.

**Table (1): Socio-demographic Characteristic of The Study Sample (n=100).**

Item	wives	Husbands
	%	%
<b>Age</b>		
≤30 years	33.0	9.0
30-≤ 35 years	35.0	22.0
≥35 years	32.0	69.0
Mean ±SD	31.4 ± 4.8	36.5 ± 5.1
<b>Educational level:</b>		
Illiterate	12.0	6.0
Read & write	10.0	7.0
Primary education	6.0	13.0
Secondary education	8.0	3.0
Diploma	22.0	18.0
University or more	42.0	53.0
<b>Occupation</b>		
Employee	21.0	44.0
House wife	75.0	27.0

Processional	4.0	29.0
<b>Residence (wives &amp; husbands)</b>		
Urban		63.0
Rural		37.0
<b>Family income and treatment cost:</b>		
Not enough to cover treatment cost (low)		30.0
Cover treatment cost (moderate)		46.0
Cover treatment cost and save money (high).		24.0

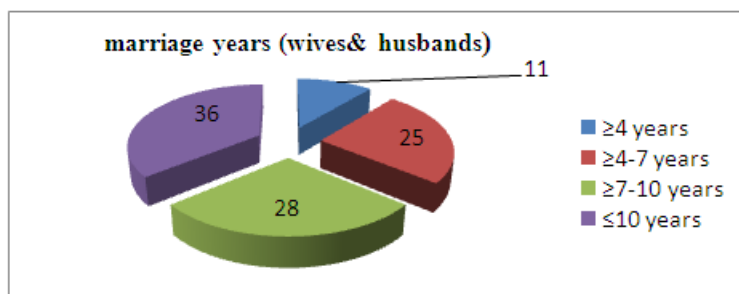


Figure (1): Show The Marriage Years (wives& husband) n=100.

Table (2): Obstetric and Medical History of The Study Sample (n=100).

Item	%
<b>Menstrual cycle</b>	
Regular	65.0
irregular	35.0
<b>Length of menstruation</b>	
≤ 3 days	32.0
4-5 days	61.0
6-7 days	7.0
<b>Problem during menstruation :</b>	
Yes	86.0
No	14.0
<b>Types of problems (n=86)*</b>	
Excessive	15.0
Painful	12.0
Excessive & painful	59.0
<b>Woman problems</b>	
No	31.0
PCO	28.0
Tubal block	23.0
Endometriosis	4.0
PCO & Tubal block	5.0
PCO & Endometriosis	1.0
Other problems	8.0
<b>Previous seminal analysis (husbands)</b>	
Yes	98.0
No	2.0
<b>Seminal analysis results</b>	
Normal	27.6
Low count & motility	56.1
Azoospermia	15.3
High rate of deformed	1.0
<b>Previous testicular biopsy (husbands)</b>	
Yes	25.0
No	75.0
<b>Testicular biopsy results</b>	
Few sperm	76.0
No sperm	16.0
FNA	4.0
Many sperm	4.0

**Table (3) Diagnostics and Surgical Investigation and Treatment among The Study Sample (n=100).**

Items	%
<b>Previous X-ray</b>	
Yes	78.0
No	22.0
<b>X-ray results (diagnosis)</b>	
Normal	44.9
Tubal block & adhesion	39.7
PCD	9.0
Endometriosis	5.1
Poor ovulation	1.3
<b>Previous surgery for infertility</b>	
Yes	14.0
No	86.0
<b>Type of surgery</b>	
Endometrium	35.7
Remove PCD	28.6
Cyst aspiration	7.1
Laparoscopy	7.1
Ovary cauterly	14.3
Tubal adhesion	7.1
<b>Previous diagnostic laborites:</b>	
Yes	45.0
No	55.0
<b>Laparoscopy result (diagnosis):</b>	
Normal	40.0
Tubal block or adhesion	28.9
PCO	24.4
PCO &tubal block	4.4
Endometriosis	2.2
<b>Wives had ART treatment before:</b>	
Yes	63.0
No	37.0
<b>ART methods</b>	
ICSI	81.0
IUI	11.1
IUI & ICSI	3.2
IVF	4.8
<b>Number of trial</b>	
1-3	90.5
≥3	9.5
<b>Outcome of the present IVF</b>	
Negative	39.0
Positive	61.0

**Table (4) Cardio- Respiratory Stressors among Wives and Husbands in The Study Sample (by record) n=100.**

Stressor	Wives		Husbands		Total sample		X <sup>2</sup> Test
	Absent	Present	Absent	Present	Absent	Present	
	%	%	%	%	%	%	
<b>Cardio-vascular</b>							
High blood pressure	79	21	81	19	80	20	0.1
palpitation	76	24	84	16	80	20	2.0
Tachycardia	42	58	73	27	57.5	42.5	19.7*
Perspiration	64	36	63	37	63.5	36.5	0.0
headache	16	84	58	42	37	63	37.8*
Chest pain	69	31	83	17	76	24	5.4*
Missing beat	69	31	80	20	74.5	25.5	3.2
Neck vein	94	6	96	4	95	5	0.4
Varicose veins	93	7	95	5	94	6	0.4
<b>Respiratory</b>							
Pressure or constructed chest	74	26	82	18	78	22	1.9
Shocking feeling	78	22	84	16	81	19	1.2
Dyspnea	71	29	84	16	77.5	22.5	4.9*
Cyanosis	99	1	96	4	97.5	2.5	1.9

\*significant difference (p≤0.05)

**Table (5): Somatic Gastro-Intestinal and Urinary Stressors among Wives and Husbands in The StudySample (by report)n= 100.**

Stressor	Wives		Husbands		Total sample		X <sup>2</sup> Test
	Absent	Present	Absent	Present	Absent	Present	
	%	%	%	%	%	%	
<b>Somatic:</b>							
Pain & general body aches	26	74	63	37	44.5	55.5	27.7
dizziness	55	45	87	13	71.0	29.0	24.9
Grinding teeth	84	16	75	25	79.5	20.5	2.5
Clenching Jaws	87	13	76	24	81.5	18.5	4.0*
Biting your nails	84	16	75	25	79.5	20.5	2.5
Muscle tension	77	23	74	26	75.5	24.5	0.2
Difficulty falling a sleep	47	53	62	38	54.5	45.5	4.6*
Neck pain	79	21	85	15	82.0	18.0	1.2
Flushed face& hotness	63	37	88	12	75.5	24.5	16.9
Walk-up tired	60	40	79	21			8.5*
Pallor	91	9	93	7	92.0	8.0	0.3
Dry mouth	90	10	91	9	90.5	9.5	0.1
<b>Gastro-intestinal :</b>							
indigestion	83	17	90	10	86.5	13.5	2.1
Diarrhea	85	15	91	9	88.0	12.0	1.7
Constipation	65	35	89	11	77.0	23.0	16.3
Heart burn	67	33	84	16	75.5	24.5	7.8*
Dysphagia	87	13	93	7	90.0	10.0	2.0
Weight gain	76	24	92	8	84.0	16.0	9.5*
Weight loss	79	21	91	9	85.0	15.0	5.7*
Stomach heaviness	55	45	91	9	73.0	31.0	32.9
Nausea & vomiting	50	50	88	12	69.0	18.0	33.8
Full stomach	71	29	90	7	82.0	12.5	16.4
Chang eating pattern	85	15	93	10	87.5	7.5	1.1
<b>Urinary</b>							
Urgency micturition	93	7	92	8	92.5	7.5	0.1
Frequent micturition	91	9	91	9	91.0	9.0	0.00

\*significant difference (p<0.05)

**Table (6): Psychological Stressors among Wives and Husbands in The Study Sample (by report) n= 100.**

Stressor	Wives		Husbands		Total sample		X <sup>2</sup> Test
	Absent	Present	Absent	Present	Absent	Present	
	%	%	%	%	%	%	
<b>Psychological stressors</b>							
Continued & worry fear	34	66	49	51	41.5	58.5	4.6*
Feel with goalless	34	66	52	48	43.0	57.0	6.6*
Fear of unsuccessful Treatment	25	75	36	64	30.5	69.5	2.9
Fear of future	31	69	43	57	37.0	63.0	3.1
Easily exhausted	32	68	50	50	41.0	59.0	6.7*
Constant worry	40	60	59	41	49.5	50.5	7.2*
Feel lazy	59	41	73	27	66.0	34.0	4.4*
Feel sad	43	57	68	32	55.5	44.5	12.7
Life out of control	60	40	76	24	68.0	32.0	5.9*
Difficulty of making	59	41	78	22	68.5	31.5	19.9
Nightmares	71	29	87	13	79.0	21.0	7.7*
Fear of unknown	73	27	82	18	77.5	22.5	2.3
Poor memory	58	42	67	33	62.5	37.5	1.7
Feeling of guilt	68	32	73	27	70.5	29.5	0.6
Decrease level of daily activity	61	39	72	28	66.5	33.5	2.7
Loss of interest in job	67	33	82	18	74.5	25.5	5.9*
Unable of meet responsibilities	77	23	85	15	81.0	19.0	2.1
Loss of sexual libido	88	12	89	11	88.5	11.5	0.1
Low of self –confidence	78	22	89	11	83.5	16.5	4.4*
Insomnia	66	34	72	28	69.0	31.0	0.84

\*significant difference (p<0.05)



**Table (7): Socio-economic Stressors among Wives and Husbands in The Study Sample (by report)n= 100.**

Stressor	Wives		Husbands		Total sample		X <sup>2</sup> Test
	Absent	Present	Absent	Present	Absent	Present	
	%	%	%	%	%	%	
<b>Socio-economic stressors</b>							
Limited social relation	45	55	53	47	49.0	51.0	1.3
Escape from talking with people	44	56	55	45	49.5	50.5	2.4
Change in living standard	33	67	45	55	39.0	61.0	3.0
Change in recreational scheme	42	58	45	55	43.5	56.5	0.2
Feeling isolation	41	59	49	51	45.0	55.0	1.3
Financial cost & social impact of prescribed diet & medication	26	74	33	67	29.5	70.5	1.2

\*significant difference (p<0.05)

**Table (8): Percentage of Total Stressors among Wives and Husbands in The Study Sample (by report)n= 100**

Stressor	Wives			Husbands			Total sample			X <sup>2</sup> Test
	low	moderate	High	low	moderate	High	low	moderate	High	
	%	%	%	%	%	%	%	%	%	
<b>Total stressors</b>										
Total physiological stressors	88	12	-	94	6	-	91	9	-	17.3*
Total psychological stressors	62	31	7	78	18	4	70	24.5	5.5	6.1*
Total socio-economic stressors	43	31	26	54	16	30	48.5	23.5	28.0	6.3*
Total stressors	76	22	2	87	11	2	81.5	16.5	2	4.4*

\*significant difference (p<0.05)

**Table (9): Negative Coping Manners among Infertile Couple (by report) n= 100.**

Coping manners	Wives		Husbands		Total sample		X <sup>2</sup> Test
	Not done	Done	Not done	Done	Not done	Done	
	%	%	%	%	%	%	
<b>Negative coping manners</b>							
Isolation	47	53	71	29	59.0	41.0	11.9*
Less talking with partner	47	53	64	36	55.5	44.5	5.9*
Avoid staying with family	60	40	78	22	69.0	31.0	7.6*
Avoid staying with family children	72	28	78	22	75.0	25.0	0.1
Spend most time in dreams & imagination	47	53	74	26	60.5	39.5	15.3*
Busy with other things when partner staying at home	59	41	71	29	65.0	35.0	3.2
Escape from marital relation	76	24	80	20	78.0	22.0	0.5
Spend most of time outdoor	85	15	72	28	78.5	21.5	5.0*
Talk about the problem	67	33	64	36	65.5	34.5	0.2
Deny the problem to others	78	22	68	32	73.0	27.0	2.5
Sleep more than usual	70	30	74	26	72.0	28.0	0.4
Reduce suffering by eating smoking-taking medications	87	13	83	17	85.0	15.0	0.6
Refuse believing what happened	86	14	82	18	84.0	16.0	0.6
Force partner to solve the problem	72	28	88	12	80.0	20.0	8.0*
Escape from carrying out doctor instructions	88	12	87	13	87.5	12.5	0.1
Think about divorce to rid of stressors	84	16	88	12	86.0	14.0	0.7
Not follow the treatment regularly	87	13	82	18	84.5	15.5	1.0
Leave the problems without no solution	78	22	73	27	75.5	24.5	0.7
Try non-medical methods to solve the problems	53	47	70	30	61.5	38.5	6.1*
Do not care about the problem result	82	18	86	14	84.0	16.0	0.6
Feel desperate (hopeless)	72	28	83	17	77.5	22.5	3.5

\*significant difference (p<0.05)

**Table (10): Positive Coping Manners among Infertile Couple (by report)n= 100.**

Coping manners	Wives		Husbands		Total sample		X <sup>2</sup> Test
	Not done	Done	Not done	Done	Not done	Done	
	%	%	%	%	%	%	
<b>Positive coping manners</b>							
Prepare self to expect the worst	46	54	52	48	49	51	0.7
Agreement with partner to solve the problem	17	83	23	77	20	80	1.1
Try to enjoy life	42	58	40	60	41	59	1.0
Talking with confidence about the problem with others	38	62	45	55	41.5	58.5	1.0
Practice motherhood with family kids	10	90	19	81	14.5	85.5	3.3
Believe in being parent one day	11	89	13	87	12	88	0.2
Be strong from network support	16	84	15	85	15.5	84.5	0.0
Expect to overcome the problem with printer	8	92	12	88	10	90	0.9
Hope miracle to happen	9	91	9	91	9	91	0.0
Think about using new reproductive technology	7	93	9	91	8	92	0.3
surrender to fate	4	96	5	95	4.5	95.5	0.1
Pray.	2	98	6	94	4	96	2.1
Read religious books	12	88	21	79	16.5	83.5	2.9
Feel strong in spite of the problem	8	92	8	92	8	92	0.0
Behave with dome during decision making	15	85	14	86	14,5	85.5	0.0
Understand problem & try to accept it.	14	86	7	93	10.5	89.5	2.6
Search for new technology to treat problem	16	84	11	89	13.5	86.5	1.1
Save money for treatment	17	83	14	86	15.5	84.5	0.3
Regularly follow the treatment and analysis and investigation	12	88	12	88	12	88	0.0
Try to control my life	13	87	10	90	11.5	88.5	0.4
Hope to treatment success	13	87	7	93	10	90	2.0
Benefit from other previous experience in this field	15	85	18	82	16.5	83.5	0.3
Try to use different methods to solve the problem	13	87	9	91	11	89	0.8
Encourage partner to follow up	10	90	11	89	10.5	89.5	0.1
Use relaxation techniques	29	71	33	67	31	69	0.4

\*significant difference (p≤0.05)

**Table (11): Percentage of Total Coping Manners to Relieve Stressors among Wives and Husbands in The Study Sample (by report) n= 100.**

Coping	Wives		Husbands		Total sample		X <sup>2</sup> Test
	moderate	high	moderate	high	moderate	high	
	%	%	%	%	%	%	
<b>Total coping manners</b>							
Positive manner	34	66	35	65	34.5	65.5	0.0
Negative manner	12	88	13	87	12.5	87.5	0.1
Total coping	18	82	22	78	20.0	80.0	0.5

\*significant difference (p≤0.05)

**Table (12): Relation between Stressor Level and Total Coping Level among Wives and Husbands in The Study Sample n= 100.**

Coping level Stressor	Wives		Husbands		Total sample	
	Moderate	High	Moderate	High	Moderate	High
	%	%	%	%	%	%
<b>Physiological</b>						
Low	15	73	19	75	17	74
Moderate	3	9	3	3	3	6
<b>X<sup>2</sup></b>	0.5		2.9		1.1	
<b>Psychological</b>						
Low	9	53	17	61	13	57
Moderate	7	24	1	17	4	20.5

High	2	5	4	-	3	2.5
<b>X<sup>2</sup></b>	15		0.0		44	
<b>Socio-economic</b>						
Low	8	35	12	42	10	38.5
Moderate	7	24	4	12	5.5	18
High	3	23	6	24	4.5	23.5
<b>X<sup>2</sup></b>	1.2		0.2		0.5	

\*significant difference (p≤0.05)

**Table (13): Relation between Total Coping Levels Adopted by Wives and Husbands and Their Socio-demographic Characteristics in The Study Sample. n= 100.**

Coping level Characteristics	Wives		Husbands		Total sample	
	Moderate	High	Moderate	High	Moderate	High
	%	%	%	%	%	%
<b>Age</b>						
≤35 years	10	58	6	25	8	41.5
≥35 years	8	24	16	53	12	38.5
<b>X<sup>2</sup></b>	1.6		0.2		0.9	
<b>Education</b>						
Low	3	25	8	18	5.5	21.5
High	15	57	14	60	14.5	58.5
<b>X<sup>2</sup></b>	1.4		1.6		0.0	
<b>Residence</b>						
Urban	9	54	11	52	10	53
Rural	9	28	11	26	10	27
<b>X<sup>2</sup></b>	1.6		2.1		1.8	
<b>Family income</b>						
Low	5	25	8	22	6.5	23.5
Moderate	8	38	8	38	8	38
High	5	19	6	18	5.5	18.5
<b>X<sup>2</sup></b>	0.2		1.1		0.4	
<b>Marriage age:</b>						
≥4 years	1	24	3	22	2	23
≥4-7 years	9	27	11	25	10	26
≤10 years	8	31	8	31	8	31
<b>X<sup>2</sup></b>	4.7		3.0		3.6	

\*significant difference (p≤0.05)

#### IV. Discussion

In Vitro Fertilization represents the definitive line of treatment for a considerable number of couples, especially in cases of male factor and unexplained infertility.<sup>[15]</sup> However, IVF treatment is emotionally and physically stressful, and of financially demanding for both woman and her husband. There is a substantial emotional investment for the couple, as this treatment is usually the last resort after years of exhausting other avenues to try to have a family. For the woman there may be considerable physical pain and the time required to undergo treatment may interfere with other ambitions in life.<sup>[16]</sup>

concerning socio-demographic characteristics of the couples the results of study demonstrated that, As regards couples age, the wives mean age was 31.4 ± 4.8, while for husbands; it was 36.5 ± 5.1. This is encouraging factor for candidate of IVF. This result is supported by **Verhaak et al.**<sup>[17]</sup> who reported “in his study about the problem of IVF cost in developing countries” who have reported that, the infertility was present among women aged 15-40 years and with a mean of 30.0±2.3. In relation to the couples education, the current study shows that more than two third for wives and husbands respectively were university or more education. This finding is in congruence with the study of **Panagopoulou et al.**<sup>[18]</sup> in Mozambique “Study on psychosocial aspects and support of IVF programmer in an Asian population” who has reported that almost one-half of study subjects had a college degree. This finding was positive as it may have contributed to the high numbers of participants who were willing to participate in the current study. Concerning Occupation, the current result revealed that most of wives were housewives. This was expected because housewives in developing countries generally have low status and drive their value from their reproductive abilities. This finding is disagreement with a study done by **Durgunet al.**<sup>[19]</sup> in the Turkish who have reported that, almost two-thirds of the respondents were working. Also the same result reported one third of couples was not enough to cover treatment cost. This result similarly a study done by, **Verhaak et al.**<sup>[20]</sup> who reported that in the study about Women's emotional adjustment to IVF, one-half of infertile women had the highest income. Also the same result reported that more than one tenth of them were married for a period of more than 10 years . This finding is congruent with the study of **Connolly et al.**<sup>[21]</sup>, in Iranian on their study of an evaluation of counseling for couples undergoing

treatment for in-vitro fertilization, who had shown that the almost one-fourth of the study subjects were married at the age of less than 20 years. One possible explanation for this finding that infertility is likely to affect younger women in countries where marriage begin at an early age and the adolescent girls are not physically prepared for childbirth.

As regards the obstetric history of the study sample. It shows that more than one third of them had irregular menstrual cycles and almost two third of them were suffer from obstetric problems and one third were PCO. As regards men seminal analysis, it was abnormal for most of them, and the major abnormality was low count and motility .However, quarter of men experienced testicular biopsy and the majority had few sperm. This result is go in line with **Mansour &Abo-Setta**<sup>[22]</sup> in his study about Assisted Reproductive Technology in Egypt, who have reported that nearly half of their study subjects had male causes of infertility. This result may be explain the fact that has been attributed to changing male life style, or exposure to social, occupational and psychological hazards.

In relation to residence the study findings showed that the couples who had live in urban area had low stressors and high coping mechanism than those lives in rural areas with no statically significant difference observed between of them. the previous finding was disagree with a study done by **Leeton**<sup>[23]</sup>who found that in a study about The early history of IVF in Australia and its contribution to the world ,the couples specially women in rural areas have more stressors than couple in urban area .this findings might be referred to customs in rural area where the families need many children and when woman in rural area are no known as infertile that family of the husband encourage him to divorce his wife or marry another woman to give birth for children which put the infertile woman in a stress situation.

Regarding the diagnostic and surgical investigations of the studied wives this results showed that more than two third of wives had cases observed with tubal block and adhesion represents. Only more than one tenth of the wives have done previous surgery for infertility and more than two thirds of the couples undergone previous ART trial, while two third of the present IVT couples succeeded by having positive results for the new one. This finding agreement with conducted by**Hammarberg et al.**<sup>[24]</sup>in a study about the women's decision-making for IVF treatment and reported the majority of patients diagnosed with tubal block and adhesion.

As regard the frequency of cardio-respiratory stressors infertile couples undergoing IVF in the current study shows that, the major complaining from cardio-vascular stressors were presented follows: headache, tachycardia. As well the majority of respiratory stressors presented were dyspnea for woman. This finding in the same line with **Boivin et al.**<sup>[25]</sup>who emphasized the fact that, fertility medication which reducing the amount of estrogen in the body, puts it in a menopausal-like state such as; acne, hirsuteness, hot flashes and body pain, fatigue, irritability, restlessness, headache and breast pain. overall the main symptoms for couples regarding cardiovascular and respiratory system was headache ,dyspnea and fatigue ,also this result reported that more than two third while concerning cardio-respiratory stressors, the wives more stressors than husbands. This result is supported by the findings of a recent study carried out by **Noorbala et al.**<sup>[26]</sup>who found that the major cardio vascular symptoms regarding to stress among infertile couples as headache tachycardia and sweating he also reported that the woman response to stressors was higher than husband. This can be referred to that woman are always afraid about failure and disturbance of their marital life.

In accordance to the different forms of somatic, gastro-intestinal and urinary stressors among wives and husband of the study sample. The most common complain among somatic stressors were presenting in generalized pain most for wives,. The most common GIT stressor were obvious in nausea and vomiting half for wives .Finding showed that the wives suffer somatic and GIT stressors more than husband .while the couple suffer from urinary stressors respectively. This findings agree with **Lemmens et al.**<sup>[27]</sup>who mentioned that prolong distress sensitivity to high level of chronic gonadotropin hormone and effect of estrogen and progesterone can disrupt the digestive system irritating the large intestine, excessive production of digestive acids in the stomach may cause a painful burning sensation and may also effect urinary system. This might be attributed to that the wife try to get a baby by anyway to safe her marital status so she bears all the stress in the beginning from the first step of procedure to the last step.

In relation tothe most common forms of psychological stressors among the infertile couples .They represented majority of couples fear of unsuccessful treatment, followed by fear from future and complain continued fear and worry. This result in the same line with **Lee et al.**<sup>[16]</sup>who reported that a relationship between the emotions of women whose infertility treatment resulted in failure and the coping methods they applied. For this reason, they claimed that the care given to women whose infertility treatment results in failure should be continuedagreement with **Lancastle and Boivin**<sup>[28]</sup>who stated that the attempts to cope in the process of waiting for the pregnancy test result allowed women to pass this duration of waiting more positively and in a relaxed manner. Related studies revealed that use of effective coping methods in the infertility treatment process helped decrease the influence of infertility and the level of anxiety. Pasch pointed out that the most important point to be taken into consideration to decrease anxiety in the process of infertility treatment and in case of failure of the treatment is not only to prepare couples for the infertility treatment process and for the probability

of failure of the treatment but also to help them cope effectively with the treatment and its outcome. This finding refer to the women suffer from psychological stressors more than the husbands.

Regarding the frequency of socioeconomic stressors among the study couples. They were present in the form of high cost of treatment for wives and husbands majority of wives and husbands, change in life style. However, the wives suffer from socioeconomic stressors more than the husband. In this respect, **Shahin**<sup>[29]</sup> who mentioned that the decision of Egyptian couples for whom assisted reproduction technique is indicated are negatively affected by financial issues. The cost of IVF still far exceeds the financial capability of most of clients, who are sometimes left with painful decision to abandon the fulfillment of their wish of procreation. Multiple gestations are the most common complications of IVF and have a profound effect on couples and health service costs **Polinder, et al.**<sup>[30]</sup> who recorded that the medical cost per twin pregnancy was considerably higher than per singleton pregnancy. The same trend was also found in the present result where 38 women had multiple pregnancies and stated that financial cost is the most common cause of their inconvenience.

Concerning the coping methods and patterns or style Adopted by couples to relieve their stressors. The current study shows that the most common negative coping patterns used by the women were isolation, less talking with partner, and spend time in dreams and imagination representing with the same percent reported more than half. However, more than one third for men they were less talking with partners, and change talking. On the other side the negative methods which were not done by the almost women were escape from carrying out doctor instructions, while for men, they were force partner to solve the problem, think about divorce with an equal percent 88%. This result in agreement with **Lee et al.**<sup>[16]</sup> who reported that in his study about a relationship between the emotions of women whose infertility treatment resulted in failure and the coping methods they applied. For this reason, they claimed that the care given to women whose infertility treatment results in failure should be continued similar with a study done by **Lancastle and Boivin**<sup>[28]</sup> and stated that the attempts to cope in the process of waiting for the pregnancy test result allowed women to pass this duration of waiting more positively and in a relaxed manner. Also in agreement with a study done by **Pasch et al.**<sup>[31]</sup> who pointed out that the most important point to be taken into consideration to decrease anxiety in the process of infertility treatment and in case of failure of the treatment is not only to prepare patients for the infertility treatment process and for the probability of failure of the treatment but also to help them cope effectively with the treatment and its outcome.

The current result also emphasize there was no statistically significant difference was found regarding to positive and negative coping among couples, also there no statically significant relations between levels of coping and socio-demographic characteristics between forms of stress affecting the couples and their coping level were detected. This finding in accordance with **Yong et al.**<sup>[32]</sup> in a study about A comparison of psychological functioning in women at different stages of in vitro fertilization treatment and who reported that the age of the women less than 35 years had chance for fertility in the opposite of older women so women less than 35 years had low stressor and high coping because of having more chance. This finding agreement with who high light that managing the stress during IVF cycle, gives high chance of pregnancy and success of IVF.

## V. Conclusion

The results of present study concluded that: the couples suffer different types of stressors (physiological, psychological and socioeconomic). However, wives suffer from stressors more than husbands, considering the use of the positive coping manners, and they were used similarly by the couple. However, negative manners were used more by wives and positive manners were used more than negative ones by the couples. And stressors and coping manners they were affected by age, education, income and marriage years

## VI. Recommendations

In the light of the present study, the following recommendations can be detected:

- Couples should be counseling about ART and its steps, should be given before starting treatment.
- Assess the stressors and coping levels in each stage of the IVF procedure and their effects.

### Further study:

Counseling program for the team working in IVF about how to deal with infertile couple and its effect on them especially in governmental centers should be applied.

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