

## Women's Satisfaction Toward IVF ( In Vitro Fertilization) Care in Public Versus Private Center.

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### Abstract

**Background:** The satisfaction of patients is increasingly recognized as one of the fundamental dimensions of quality of care, especially with infertility treatment. **Aim of the study** was to measure women's satisfaction toward IVF care in public versus private center. **Subjects & methods:** Descriptive comparative design , conducted at two centers (Banoun private center for IVF and Assisted Reproductive Unit at Women health hospital), Systematic random sample was used in this study included 300 women (150 from each center). The used tool was structured interviewing questionnaire included (Personal data, Menstrual history, Infertility history,etc) & Scale of women satisfaction about IVF care(Gonen,2016). **Results:** There is statistical significant difference between satisfaction in public and private centers as regards to information provided, willingness of staff to listen carefully and help women & Report the women about regular progress of the condition with p.v (.000, .005, .003) respectively. **Conclusion:** There was statistical significant difference between satisfaction in public and private center as regards information provided, willingness of staff to listen carefully and help women. **Recommendations:** Medical staff should spend more time in consulting and providing more explanation to improve women's satisfaction.

**Keywords:** *Women's Satisfaction & In Vitro Fertilization.*

### Introduction

Infertility is a disease characterized by the inability to create a clinical pregnancy after 12 months of frequent, unprotected sexual intercourse or by an deficiency in the ability of a person to reproduce either as a person or with his or her partner. (Zegers-Hochschild et al., 2017)

The first IVF baby was born in England in 1978 after more than twenty years of research. However; more than 250,000 children have been conceived as a consequence of using IVF method from this point forward. (Obioha et al., 2014)

In Vitro Fertilization (IVF) is a human-assisted technology of reproduction that helps a woman who is infertile to get pregnant. It involves four fundamental measures: 1) stimulating the ovaries to develop numerous ovarian follicles;

2) Aspiring mature oocytes from the ovaries of the woman with ultrasound guidance under anesthesia; (3) oocytes and sperm are put in the laboratory to allow fertilization, and (4) embryos are transmitted to the woman's uterus for the establishment of pregnancy (Bayer, et al., 2017)

IVF was created for women with tubal infertility, but its indications soon began to grow. In the 1990s intracytoplasmic sperm injection was developed to treat couples in which the man has bad semen quality that prohibits sperm from coming near to an egg like tubal infertility. (Kamphuis et al., 2014)

Clients ' satisfaction with medical care is increasingly acknowledged as one of the fundamental aspects of quality care, particularly in the treatment of infertility. (Gonen, 2016)

Patient satisfaction is a significant measure that is commonly used to assess health care quality. Patient satisfaction impacts clinical outcome, retention of patients and claims of medical malpractice. It affects delivery of quality health care in a timely, efficient and patient-centered manner. Patient satisfaction is therefore a proxy but a very efficient indicator for measuring physicians and hospitals ' achievement. (Prakash, 2010)

### Significant of the study

Infertility is estimated to be as high as 186 million individuals globally. Recent global demographic surveys reveal that infertility continues to be a reproductive problem, in spite of the massive global increase of ART services over the past decade. It is estimated that infertility affects 8 to 12 percent of reproductive-age couples around the world. However, the infertility rates are much higher in some regions of the world, reaching 30% in some regions. (Ghraib & Khait, 2017). In Egypt, infertility incidence has been estimated to be 10.4% of married couples (Eltoukhi, et al., 2017) Infertility is a traumatic event, and assisted reproductive techniques are now a revolution for treatment. In vitro fertilization is a commonly

performed technique. Many factors affect the IVF procedure success and outcomes. (Eltoukhi et al., 2017) Increasing patient satisfaction with IVF services, treatments and facilities has a positive effect on patients' psychological and mental state and, in turn, has an impact on the outcome of treatments and dropout rates of treatment. (Gonen, 2016) So, this study will shed more light on women's satisfaction toward IVF care in two centers.

### Aim of the study

The aim of the study was to measure women's satisfaction toward IVF care in public versus private center.

### Research questions

What is the level of women's satisfaction toward IVF care?

Is there difference between women's satisfaction in public IVF center and women's satisfaction in private IVF center?

### Subjects & Methods

**Research design:** It was descriptive comparative research design.

**Setting of the study:** The study was conducted at two centers (Banoon private center for IVF and Assisted Reproductive Unit at Women health hospital, Assiut University)

#### Sample

Systematic random sample was used in this study. Random assignment was done by computer generated tables. The Sample was calculated by using (Epi-info statistical package, version 7.2 which designed by CDC) (center for disease control and prevention) with 80% power, a value of 2.5 is chosen at the acceptable limit of precision (D) at 95% confidence level (C1) with expected prevalence 10%, worst acceptable 25%. accordingly, sample size was estimated to be 300 (150 for each group) +10% of individual to guard against non-response rate.

#### Inclusion criteria

1. Women undergoing IVF treatment
2. Women who agree to participate in the study

#### Exclusion criteria

1. Women who had any medical problems
2. Women who were older than 37 yrs.
3. Women with signs of reduced ovarian reserve as elevated FSH levels.

#### Tools

##### Tools of the study

##### Tool no. (1) Structured interviewing questionnaire include

**Part I: Personal data** that was included: Name, age, residence, educational level, occupation, and duration of marriage.

##### Part II: clinical data

- 1- **Medical history** was included: the history of diabetes, hypertension, renal disease, cardiac disease, hepatic disease, and any other diagnosed medical disease.
- 2- **Menstrual history** was included: Age of menarche, Duration, Interval, and rhythm
- 3- **Infertility history** was included: years of infertility, type of infertility, cause of it, previous trial for ART, previous failed IVF.
- 4- **Past obstetric history** was included: number of gravidity, number of parity, number of abortion, No of living children, time since last delivery or abortion.

##### Tool (2) Scale of patient satisfaction about IVF (Gonen, 2016)

-Satisfaction about information provided (5 items).

-Satisfaction about staff communications & counseling and support (5 items).

-Satisfaction about environmental conditions & waiting time (3 items).

Evaluation of treatment questions about satisfaction were presented on 7-point Likert scale

1 represents 'Completely dissatisfied'; 2 represents 'Mostly dissatisfied'; 3 represents 'Somewhat dissatisfied'; 4 represents 'neither satisfied or dissatisfied', 5 represents 'Somewhat satisfied'; 6 represents 'Mostly satisfied' and 7 represents 'Completely satisfied'

##### Scoring system

-60% or more represents satisfied, 40% or less represents dissatisfied

-1, 2, 3 represent dissatisfied; 4,5,6,7 represent satisfied (Gonen, 2016)

#### Methods

##### Methods of data collection

- A review of national and international related literature of the current study using text books, articles and scientific journals was done. Then the tool was prepared based on this literature and it was reviewed for validation by supervisors.
- Before conducting the study an official permission was obtained from the manager of Banoon center and Assisted Reproductive Unit of Women's Health Hospital after explaining the purpose of the study.
- **Pilot study** was carried out on 10% of cases (30 case) to test the clarity of the questions and to detect any further problems or difficulties that help in making the necessary modification. There wasn't any modification on the tool and the pilot sample was included in the total sample.
- The study was carried out during the period from February (2018) to November (2018).

- The study was conducted at Banoon center and Assisted Reproductive Unit of Women health hospital and was included simple random sample of 300 Women undergoing IVF treatment (150 from each center).
- The participants were divided into two groups  
**Group A** undergoing IVF treatment at public IVF center (150 women).  
**Group B** undergoing IVF treatment at Banoon Private IVF center (150 women).

#### Assessment phase

The researcher interviewed the women face to face; each interview took about 15-30 minutes at the stage of induction of ovulation, and at the beginning of each interview, the researcher greeted, introduced herself to the woman after that the researcher explained the nature and aim of study, and then an oral consent to participate in the study was obtained from each woman. Then, the researcher assessed the following data

1- Personal data, menstrual history, infertility history & past obstetrical history if present.

2- Satisfaction scale.

#### Validity and Reliability

Content validity was ascertained by a group of (3) experts from obstetrical & Gynecological nursing at faculty of nursing. Their opinions were elicited regarding the tool format layout, and scoring system. The content of the tool tested regarding the

knowledge accuracy, relevant and competency and for the reliability, the tools were confirmed for consistency by cronbach's alpha test. Coefficiency (alpha=.871;.890&0.21) respectively

#### Ethical considerations

1. Research proposal was approved from Ethical Committee in the Faculty of Nursing
2. There was no risk for study subject during application of the research.
3. The study was followed common ethical principles in clinical research.
4. Written consent was obtained from each patient or guidance that was willing to participate in the study.
5. Confidentiality and anonymity was assured.
6. Patient's privacy was considered during collection of data.

#### Statistical analysis

Data entry and statistical was done using the statistical package for social science program (SPSS. version 22). qualitative variables were presented as number and percentage. Quantitative variables were presented as mean  $\pm$ SD. Comparison between qualitative variables was done by using chi-square. Comparison between quantitative variables was done by using student t-test.

## Results

Table (1): Distribution of studied women according to their Socio-demographic characteristics among both groups.

Sociodemographic characteristics	public IVF center N=150		private IVF center N=150		P-Value
	N	%	N	%	
<b>Age (years)</b>					<b>.440</b>
< 25yrs	19	12.7%	27	18%	
25 -< 30 yrs	52	34.7%	49	32.7%	
30 -37yrs	79	52.7%	74	49.3%	
<b>Residence</b>					<b>*.009</b>
Urban	32	21.3%	55	36.7%	
Rural	118	78.7%	95	63.3%	
<b>Educational level</b>					<b>*.002</b>
Illiterate & read and write	31	20.7%	16	10.7%	
Basic education	22	14.7 %	9	6%	
Secondary	72	49 %	99	66%	
High education	25	16.7%	26	17.3%	
<b>Occupation</b>					<b>.514</b>
Employee	24	16 %	20	13.3%	
House wife	126	84 %	130	86.7%	
<b>Years of marriage</b>					<b>.542</b>
Less than 1yr	1	.7%	1	.7%	
1-5yrs	48	32%	59	39.3%	
5-10yrs	65	43.3%	54	36%	
More than 10yrs	36	24%	36	24%	

**Table (2): Distribution of women's satisfaction about information provided in public IVF center versus in private IVF center.**

	Public IVF center		private IVF center		p-value
	N(150)	%	N(150)	%	
<b>1-Information on the chances of success</b>					
completely dissatisfied	.....	.....	.....	.....	<b>.000*</b>
Mostly dissatisfied	.....	.....	.....	.....	
Somewhat dissatisfied	5	3.3%	8	5.3%	
Neither satisfied nor dissatisfied	10	6.7%	3	2.0%	
Somewhat satisfied	38	25.3%	7	4.7%	
Mostly satisfied	16	10.7%	20	13.3%	
Completely satisfied	81	54%	112	74.7%	
<b>2-Information on prognosis, different treatment options, clinical aspects, and possible side effects of treatment</b>					
Completely dissatisfied	4	2.7%	0	.0%	<b>*.000</b>
Mostly dissatisfied	1	.7%	0	.0%	
Somewhat dissatisfied	33	22.0%	16	10.7%	
Neither satisfied nor dissatisfied	13	8.7%	4	2.7%	
Somewhat satisfied	19	12.7%	14	9.3%	
Mostly satisfied	7	4.7%	38	25.3%	
Completely satisfied	73	48.7%	78	52.0%	
<b>3-Information about potential health problems of (defects, prematurity)</b>					
Completely dissatisfied	....	....	....	....	<b>*.004</b>
Mostly dissatisfied	6	4 %	0	0%	
Somewhat dissatisfied	32	21.3%	40	26.7%	
Neither satisfied or dissatisfied	18	12.0%	7	4.7%	
Somewhat satisfied	17	11.3%	11	7.3%	
Mostly satisfied	6	4	15	10%	
Completely satisfied	71	47.3%	77	51.3%	
<b>4-Information about medical issues during pregnancy (multiple pregnancies, ectopic pregnancies, etc.)</b>					
Completely dissatisfied	4	2.7%	.....	.....	<b>* .026</b>
Mostly dissatisfied	1	.7%	.....	.....	
Somewhat dissatisfied	36	24%	40	26.7%	
Neither satisfied nor dissatisfied	14	9.3%	5	3.3%	
Somewhat satisfied	18	12%	13	8.7%	
Mostly satisfied	6	4%	15	10%	
Completely satisfied	71	47.3%	77	51.3%	
<b>5-Information on treatment costs</b>					
Completely dissatisfied	....	....	....	....	<b>* .000</b>
Mostly dissatisfied	....	....	....	....	
Somewhat dissatisfied	4	2.7%	....	....	
Neither satisfied nor dissatisfied	9	6.0%	....	....	
Somewhat satisfied	32	21.3%	5	3.3%	
Mostly satisfied	14	9.3%	19	12.7%	
Completely satisfied	91	60.7%	126	84%	

(\*) statistically significant difference

**Table (3): Distribution of women's satisfaction about staff communications & counseling and support in public IVF center versus in private IVF center.**

	Public IVF center		Private IVF center		p-value
	N(150)	%	N(150)	%	
<b>1-Attitude of fertility clinic staff and their relationship with patients</b>					<b>.110</b>
Completely dissatisfied	.....	.....	.....	.....	
Mostly dissatisfied	.....	.....	.....	.....	
Somewhat dissatisfied	.....	.....	.....	.....	
Neither satisfied nor dissatisfied	.....	.....	.....	.....	
Somewhat satisfied	2	1.3%	.....	.....	
Mostly satisfied	10	6.7%	18	12.0%	
Completely satisfied	138	92.0%	132	88.0%	
<b>2-No change in the fertility clinic staff from start of treatment to end</b>					<b>.112</b>
Completely dissatisfied	.....	.....	.....	.....	
Mostly dissatisfied	.....	.....	.....	.....	
Somewhat dissatisfied	.....	.....	.....	.....	
Neither satisfied nor dissatisfied	.....	.....	.....	.....	
Somewhat satisfied	.....	.....	.....	.....	
Mostly satisfied	10	6.7%	18	12.0%	
Completely satisfied	140	93.3%	132	88.0%	
<b>3- Staff are willing to listen carefully and help patients</b>					<b>*.005</b>
Completely dissatisfied	.....	.....	.....	.....	
Mostly dissatisfied	.....	.....	.....	.....	
Somewhat dissatisfied	.....	.....	.....	.....	
Neither satisfied nor dissatisfied	.....	.....	.....	.....	
Somewhat satisfied	.....	.....	.....	.....	
Mostly satisfied	37	24.7%	18	12.0%	
Completely satisfied	113	75.3%	132	88.0%	
<b>4- Regular progress update on condition is in place</b>					<b>*.003</b>
Completely dissatisfied	.....	.....	.....	.....	
Mostly dissatisfied	.....	.....	.....	.....	
Somewhat dissatisfied	.....	.....	.....	.....	
Neither satisfied nor dissatisfied	.....	.....	.....	.....	
Somewhat satisfied	2	1.3%	.....	.....	
Mostly satisfied	39	26.0%	18	12.0%	
Completely satisfied	109	72.7%	132	88.0%	
<b>5- Medication is provided on time</b>					<b>.171</b>
Completely dissatisfied	.....	.....	.....	.....	
Mostly dissatisfied	.....	.....	.....	.....	
Somewhat dissatisfied	.....	.....	.....	.....	
Neither satisfied nor dissatisfied	.....	.....	.....	.....	
Somewhat satisfied	.....	.....	.....	.....	
Mostly satisfied	11	7.3%	18	12.0%	
Completely satisfied	139	92.7%	132	88.0%	

**Table (4): Distribution of women's satisfaction about physical conditions&waiting time in public IVF center versus in private IVF center.**

	public IVF center		private IVF center		p-value
	N(150)	%	N(150)	%	
<b>1-Environmental conditions in the operating room</b>					
Completely dissatisfied	....	....	....	....	<b>.281</b>
Mostly dissatisfied	....	....	....	....	
Somewhat dissatisfied	....	....	....	....	
Neither satisfied nor dissatisfied	2	1.3%	....	....	
Somewhat satisfied	....	....	....	....	
Mostly satisfied	22	14.7%	18	12.0%	
Completely satisfied	126	84.0%	132	88.0%	
<b>2- Environmental conditions in the recovery room (number of beds, personal bedside cabinet, location of bathroom, privacy)</b>					
Completely dissatisfied	0	.0%	2	1.3%	<b>.118</b>
Mostly dissatisfied	2	1.3%	....	....	
Somewhat dissatisfied	....	....	....	....	
Neither satisfied nor dissatisfied	2	1.3%	....	....	
Somewhat dissatisfied	....	....	....	....	
Mostly satisfied	27	18.0%	20	13.3%	
Completely satisfied	119	79.3%	128	85.3%	
<b>3-Waiting time</b>					
Completely dissatisfied	....	....	6	4.0%	<b>.000*</b>
Mostly dissatisfied	....	....	21	14.0%	
Somewhat dissatisfied	27	18.0%	26	17.3%	
Neither satisfied nor dissatisfied	3	2.0%	0	.0%	
Somewhat satisfied	24	16.0%	31	20.7%	
Mostly satisfied	50	33.3%	7	4.7%	
Completely satisfied	46	30.7%	59	39.3%	

**Table (1):** Shows that there is significant difference between women in assisted reproduction center in women health hospital and in Banon center as regards residence and level of education with p.v (.009,.002) respectively .

**Table (2):** Shows that there is statistical significant difference between satisfaction in public IVF center and satisfaction in private center as regards information provided about IVF procedure with p.v (.000,).

**Table (3):** Shows that there is statistical significant difference between satisfaction in public IVF center and satisfaction in private center as regards staff willingness to listen carefully and help patients , Regular progress update on condition is in place with p.v (.005, .003) respectively.

**Table (4):** Shows that there is no statistical significant difference between satisfaction in public IVF center and satisfaction in private center as regards environmental conditions & there is statistical significant difference between satisfaction in public

IVF center and satisfaction in private center as regards waiting times with p.v (.000)

### Discussion

Patient satisfaction is an important and commonly used indicator for measuring the quality in health care. Patient satisfaction affects clinical outcomes, patient retention, and medical malpractice claims. (**Prakash, 2010**) So, this study will shed more light on women satisfaction with IVF services in two centers.

One of the most important findings to arise from this study was the high level of satisfaction with the medical care received by women undergoing IVF.

In the current study, regarding women's satisfaction in both centers, it was noticed that majority of infertile women are satisfied with the care they received both groups, these results agree with **Gonen (2016)** in his study conducted in 8 public IVF units in public hospitals in Israel to investigate women' satisfaction with various aspects of fertility care who reported that

level of satisfaction was high among IVF patients with the medical care they received.

The current study was the first study that investigated comparison between women satisfaction in public IVF center and women satisfaction in private center satisfaction in woman's health hospital, Assuit university. There are no previous studies.

Regarding women's Satisfaction about information provided in public IVF center and in private center, there is statistical significant difference between satisfaction in public IVF center and satisfaction in private center in relation to information on the chances of success, information on (prognosis, different treatment options, clinical aspects, and possible side effects of treatment), information about potential health problems of "test tube babies" (defects, prematurity), information about medical issues during pregnancy (multiple pregnancies, ectopic pregnancies, miscarriages, etc.), information on treatment costs with p.v (.000, .000, .004, .026, .000). This result is interpreted by public IVF units are very busy and pressured. Consequently, personal attention and the detailed information relevant to a specific individual cannot always be given as desired.

Regarding women's satisfaction about staff communications & counseling and support among both groups, there is statistical significant difference between satisfaction in public IVF center and satisfaction in private center as regards staff willingness to listen carefully and help patients, Regular progress update on condition is in place with p.v (.005, .003) respectively.

Also, this could be interpreted by that the public IVF units are very busy and pressured. Consequently, there is no time to listen carefully and help patients, also to provide the woman information about progress of the condition and there was lack in communication between staff and women.

Regarding women's satisfaction about physical conditions & waiting time among both groups, there is no statistical significant difference between satisfaction in public IVF center and satisfaction in private center as regards environmental conditions & there is statistical significant difference between satisfaction in public IVF center and satisfaction in private center as regards waiting times with p.v (.000).

#### Study strengths & limitations

##### Merits

- The prospective way of the study & two centers included.
- This is a new idea and it has not been applied in Egypt before.

##### Limitations

- There were no previous studies.

##### Conclusion

The majority of infertile women were satisfied with the care they received but there was statistical significant difference between satisfaction in public IVF center and satisfaction in private center as regards information provided, staff willingness to listen carefully and help patients.

##### Recommendations

- 1- Other studies should also be conducted in other centers to further investigate the issue and re-confirm the reliability and validity of the assessment instrument in evaluating patient' satisfaction, in order for it to be applied at IVF centers.
- 2- Medical & nursing staff should spend more time in consulting and explaining to women to improve women's satisfaction.
- 3- Develop nursing training programs about how to evaluate women's satisfaction about IVF care.

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