

Assessment of Infertile Couples' Knowledge regarding In Vitro Fertilization Process

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Abstract

Background: In Vitro Fertilization (IVF) is a type of assisted reproductive technology used for infertility treatment couples undergoing (IVF) suffer from various problems that affect their life. **Aim:** This study aimed to assess infertile couples' knowledge regarding In Vitro Fertilization Process. **Research design:** A descriptive research design was utilized. **Setting:** This study conducted at Assisted Reproductive Unit at Ain Shams Maternity University Hospital. **Sample:** A simple random sample was used to recruit 98 couples. **Tool of data collection:** An interviewing questionnaire sheet was used for data collection. **Results:** shows that mean age of the studied husbands is (35.97 ± 5.47) years while, the mean age of the studied wives is (29.72 ± 4.14) years. As regard infertile couples total level of knowledge regarding IVF process only (12.8571 ± 2.55767) of the wives have satisfactory level of total knowledge regarding IVF process while, (6.0408 ± 1.45715) of husbands have satisfactory level of total knowledge regarding IVF process. **Conclusion:** The finding of the current study indicated that less than two third of infertile couples have unsatisfactory level of knowledge regarding IVF process. Furthermore, nearly three quarters of wives have unsatisfactory knowledge regarding factors that increase the chances of IVF success, required medications, instructions followed after the procedure, and complications of IVF process. While, nearly three quarters of husbands have unsatisfactory knowledge regarding instructions followed before and during the procedure. **Recommendation:** Based on the finding of the current study the following recommendation is suggested developing educational programs regarding IVF process for infertile couples on IVF unit of Ain shams maternity university hospital.

Key Words: Infertile Couples knowledge - In Vitro Fertilization Process

Introduction:

Infertility is defined as not being able to get pregnant (conceive) after one year (or longer) of unprotected sex. The prevalence of infertility is approximately 14%, with the range from 7-28% depending on the age of the woman (Xella, et al, 2016). In vitro Fertilization is one Assisted Reproductive Technology (ART) commonly used for treatment of infertile couple (Barazani, et al., 2012).

In vitro fertilization (IVF) is a process of fertilization where an egg is combined with sperm outside the body, in vitro ("in glass"). The process involves monitoring and stimulating a woman's ovulatory process, removing an ovum or ova (egg or eggs) from

the woman's ovaries and letting sperm fertilize them in a liquid in a laboratory. After the fertilized egg (zygote) undergoes embryo culture for 2–6 days, it is implanted in woman's uterus, with the intention of establishing a successful pregnancy (Pasch, et al., 2014).

In Vitro Fertilization (IVF) is psychologically and emotionally stressful. Stress before, during and/or after the IVF treatment is multidimensional. There is a chronic source of stress caused by the threat of permanent infertility and loss of hope. Another source of stress is the threat of the treatment itself, and the risk of spontaneous abortion (Andreotti, et al., 2013).

Infertility nurses work diligently to help execute treatment plans and play an important

role in supporting patients through the complex journey of infertility from the diagnosis to treatment to pregnancy (*Mohammadi, 2015*).

The role of the nurse in assisted conception in treatment program coordinator and as such the nurse plays an important role within a multidisciplinary team: Therefore The intense and stressful nature of treatment requires the nurse to provide emotional support to the couples undergoing treatment. Also, good communication is essential to ensure that information is appropriately and effectively given and received (*Yilmazi, et al., 2014*).

Significant of the Study:

According to The World Health Organization (WHO), infertility in Egypt affects 15 percent of Egyptian couples, of these women 9.2 percent suffer from secondary infertility and 5.8 percent suffer from primary infertility, which mean about 3 million women are infertile (*Deyhoul, et al., 2017*).

In Egypt, infertility affects an estimated 10-15% of couples of reproductive age. Infertility treatment has known psychological impact on women and their partners. Since assisted reproductive technologies are often a last resort to achieve pregnancy, treatment is stressful for most couples (*Mousavi et al., 2014*). Based on this important issue researcher suggested this study to assess infertile couples' knowledge regarding IVF process.

Aim of the study:

This study aims to assess infertile couples' knowledge regarding IVF process.

Research question: Dose infertile couples' have satisfactory knowledge regarding IVF process.

Subjects and Method:

Research design: A Descriptive research design was used for this study.

Setting: The study was conducted at Assisted Reproductive Technology Unit of Ain Shams Maternity university Hospital.

Sampling Type, size, and technique: A simple random sample tossing technique was used to recruits 98 infertile couples undergoing IVF process for first time based on the following statistic formula.

$$n = \frac{Z^2 P(1-P)}{d^2}$$

z = level of confidence. (For the level of confidence of 95%, which is conventional, Z value is 1.96).

P = expected prevalence or proportion. (P is considered 0.5)

d =precision. (d is considered 0.05 to produce good precision and smaller error of estimate)

Tools of data collection:

An Arabic Structured Interviewing Questionnaire Sheet: was designed by the researcher after reviewing the relative literature. It was consisted of (18) questions that divided into three parts as follow;

* **First part:** It was used to assess couple's socio demographic data including; (couple's age, residence, couple's educational level, couple's occupational status and family income).

***Second part:** It was concerned with obstetric history it including previous pregnancies.

***Third part:** It was used to assess couple's knowledge regarding in vitro fertilization. It was consists of 9 items including (definition, procedure, factors affecting on IVF success, knowledge before, during & after procedure, complications after IVF& importance from taking prescribed medication). The response to the items ranged from 2= correct, 1=incorrect.

Scoring system for Knowledge:

The total score of knowledge was 18 marks. Each correct answer was given two marks and the incorrect answer was given one. The total scores were graded as < 75 % unsatisfactory, ≥ 75 satisfactory.

Validity & reliability of data collection

tool: tool was reviewed by a panel of three experts in obstetric and gynecological nursing field to test the face and content validity. Each of the experts was asked to examine tools for content coverage, clarity, wording, length, format, and overall appearance, Cronbach alpha test used to assess tools reliability.

Administrative design:

An official written approval letter clarifying the purpose of the study was obtained from the dean of the faculty of Nursing Ain Shams University and directed to the director of Ain Shams Maternity University Hospital as an approval for data collection.

Ethical consideration:

The approval was obtained from Scientific Research Ethical committee in Faculty of Nursing at Ain Shams University before starting the study. Then an official permission was granted from the director of Ain Shams maternity university hospital. Written informed consent was obtained from participant after explaining the purpose of study, in addition there is no harm occurred to the participant. Each participant had right to withdraw from the study at any time. Human rights were considered. Data was confidential and it was used only for the research. The researcher clarified the objective and aim of the study to couples that included in the study.

Operational design:**-Preparatory phase:**

Review of the past and current local and international related literature using books, scientific magazines and net search articles, and then prepared tool of data collection.

• **A pilot study:** was conducted on 10% of total study sample (10 couples), it was conducted to evaluate applicability of the study and the efficacy, clarity of tool that used in the study and time need for data collection. Then according to the necessary modification of tool was done "rephrasing of two questions". Couples included in the pilot study were included with the sample size.

• Field work:

Data collection of the study was consumed 4 months in the period from beginning of October 2018 to the end of January 2019 the researcher visited the study settings during morning period from 9 Am to 1 Pm 2 days /week after taking approval from the directors of the study settings. The researcher attended the previous mentioned setting then start with list of infertile couples who attend on each day then give a number for each couple in a plain paper and select from 2-3 couple each day of data collection using tossing technique. The researcher interviewed each couple and participation approval was obtained orally after explaining the purpose of the study. Researcher conducted a meeting in a private room then asks both (husband, and wife) to fill tool of data collection separately. Couples meeting consumed between 20-25 minutes.

Statistical design:

The collected data were organized, categorized, analyzed using the statistical program for social sciences (SPSS version 20.0) data were presented using descriptive statistics in the form of frequency and percentages for Qualitative variables mean \pm standard deviation (SD) For Quantitative variables.

Results:-

Table (1): Shows that mean age of the studied husband is 35.97 ± 5.47 years while, the mean age of the studied wives is (29.72 ± 4.14) years. In addition, 56.2% of infertile couples from urban area. Concerning husband's education at level of them 38.8% have university education, while, 46.9% of wives have university education.

Table (2): This table classified Points out that 70.4% of wives had regular menstrual cycle. Concerning menstrual problem 65.3% of wives had sever pain. It was found that 52% of the wives had one time pregnancy.

Table (3): Reveals that 74.5%, 72.4%, 73.5%, and 75.5% of the wives have unsatisfactory knowledge regarding factors that

increase the chances of IVF success, required medications for IVF, instructions followed after the procedure and complications of IVF respectively.

Table (4): Shows that 65.3% of the husbands have unsatisfactory knowledge regarding steps of IVF while, 72.4% and 76.5% have unsatisfactory knowledge regarding instructions followed before performing the procedure and instructions followed during performing the procedure.

Figure (1): Displays that only 34.7% of the wives have satisfactory level of total knowledge regarding IVF process while, 37.2% of husbands have satisfactory level of total knowledge regarding IVF process

Table (1): Distribution of couples according to their socio-characteristics between control and study groups (N=98).

Socio-Demographic Data	No.	%
Husband's age		
25<30 year	17	17.3
30<35 year	37	37.7
35<40 year	31	31.6
40 +year	12	13.2
Mean ± SD	35.9787 ± 5.47520	
Wife's age		
25<30 year	60	61.2
30<35 year	28	28.5
35<40 year	10	10.3
Mean ± SD	29.7234 ± 4.14258	
Residence		
Rural	43	43.8
Urban	55	56.2
Husband's education		
Illiterate	14	14.3
Primary education	12	12.4
Secondary education	14	14.3
University education	38	38.8
Wives' education		
Illiterate	13	26.5
Primary education	3	6.1
Secondary education	10	20.4
University education	23	46.9
Husband's Job		
Not work	0	0.00
Work	98	100.0
Wives' Job		
Not work	26	45.9
Work	53	54.1
Income (monthly)		
Enough	30	30.6
Not enough	62	63.3
Enough and safe	6	6.1

Table (2): Number and Percentage Distribution of Wives According to their obstetric history between study and control (N=98).

Obstetric history	No.	%
Menstrual cycle		
Regular	69	70.4
Irregular	29	29.6
Period of menstruation		
2-3 days	35	35.7
4-6 days	49	50.0
>6 days	14	14.3
Mean \pm SD	4.6939 \pm 0.23905	
Menstruation problems		
Bleeding	34	34.7
Sever pain	64	65.3
Number of pregnancy		
No	8	8.2
One	51	52.0
Two	37	37.8
More than two	2	2.0

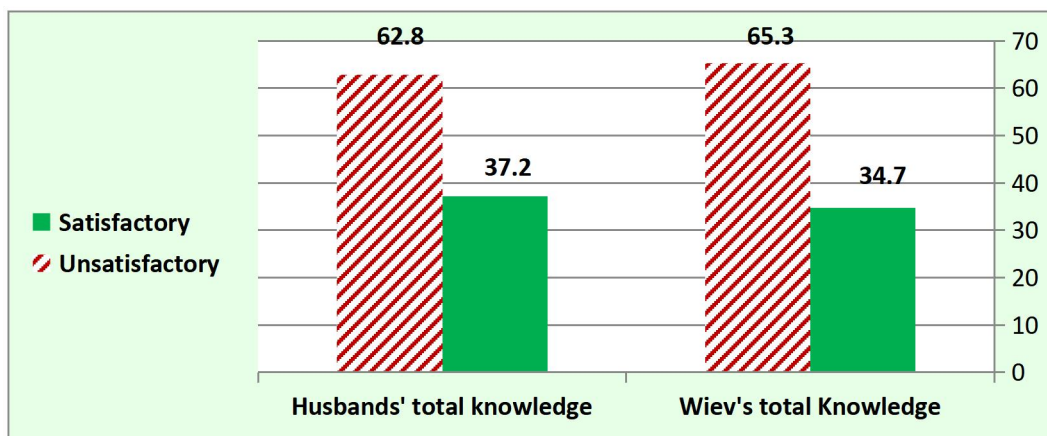
Table (3): Distribution of wives regarding their knowledge about IVF process

Wives' knowledge	Satisfactory		Unsatisfactory	
	No	%	No	%
Concept of artificial insemination	55	56.1	43	43.9
Indication for IVF	37	37.8	61	62.2
Factors that increase the chances of IVF success	25	25.5	73	74.5
Steps of IVF	31	31.6	67	68.4
The wives need complete bed rest	28	28.6	70	71.4
Required medications for IVF	27	27.6	71	72.4
Factors that affect the success of the process	43	43.9	55	56.1
Instructions followed before performing the procedure	35	35.7	63	64.3
Instructions followed during the procedure	43	43.9	55	56.1
Instructions followed after the procedure	26	26.5	72	73.5
Complications of IVF	24	24.5	74	75.5

Table (4): Distribution of the husband regarding their knowledge about IVF process

Husband' knowledge	Satisfactory		Unsatisfactory	
	No	%	No	%
Concept of artificial insemination	38	38.8	60	61.2
Indication for IVF	48	48.9	50	51.1
Factors that increase the chances of IVF success	45	45.9	53	54.1
Steps of IVF	34	34.7	64	65.3
The wives need complete rest	33	33.7	65	66.3
Required medications for IVF	37	37.8	61	62.2
Factors that affect the success of the process	39	39.8	59	60.2
Instructions followed before performing the procedure	27	27.6	71	72.4
Instructions followed during the procedure	23	23.5	75	76.5
Instructions followed after the procedure	39	39.8	59	60.2
Complications of IVF	37	37.8	61	62.2

Figure (1): Distribution of infertile couple according to their total level of knowledge regarding IVF process



Discussion

Regarding infertile couples' age, the result of the present study indicate that more than one third of husbands their age ranged between (30-35) years ,while more than half of wives age ranged between (25-30)years. This finding was in respect with *Catherine, et al; (2015)* who carried out a study about "the effect of couple age on fertility and outcome of IVF" and reported that women age between the age of (20 -30) years, a woman's fertility level is at its peak. From the age of (30-35) a woman's fertility level is at its middle but up to the age of 35, while egg quality will decline slightly as time progresses, women are still in a period of high fertility.

This result disagreement with *Gulino et al.,(2013)* in their study about "Is age the limit for human-assisted reproduction techniques" found limited evidence of an association between paternal age and ART ,they found that the mean age of the participants was 29.2 (SD=4.5) years and the ages were ranging from (24 to 40) .

Concerning infertile couples' residence, the current study results revealed that more than one half were from urban. This could be due to that in the urban area there are many IVF centers that can be utilized by infertile couples. This finding was coincides with *Anderson, et al; (2013)* in their study about "Residence factor in people seeking infertility treatment "and stated

that three quarter (76.8) of the studied group were urban. Also, this finding was in the same line with *Manna, et al; (2014)* who carried out "A community based study on infertility and associated socio-demographic factors" and showed that, the majority of the studied sample was urban (84%) and the minority was rural (16%) in India.

Relating to infertile couples' level of education, the present study showed that, the majority of studied sample have university education. This finding supported by *Mahalingaiah, et al; (2012)* they conducted a study about "Couples educational and influence on in vitro fertilization outcomes "and reported that majority of the sample was approximately 92% among highly educated couples.

As regard wives working status, the result of the present study indicated that more than half of wives were work the current study finding was in agreement with the study conducted by *Durgun and Okumu 2014)*who conducted the study about" Experiences of Turkish women about infertility treatment" they mentioned that almost two-thirds of the respondents were working

As regard obstetric history of wives the result of the current study indicated that approximately two third of wives had regular menstrual cycle, sever pain during menstruation. The previous study finding was opposed with *Kasius, et al; (2014)* who conducted study

about "Menstrual patterns and infertility" they reported that menstruation may be preceded by cramps in the pelvis or lower back as the body begins to squeeze blood vessels shut in preparation for shedding the uterine lining. Some cramping is normal, but severe or excessive cramps or menstrual bleeding may also signal problems with the hormones, ovaries, or uterus which may impair fertility if not addressed. This finding also, was disagree with **Hammarberg et al.,(2014)** who conducted a study about " Women's experience of IVF" and clarified that more than one third of them had regular menstrual cycles and almost two third of them were suffer from obstetric problems.

Concerning wives' knowledge regarding IVF process the result of the current study points out that nearly three quarter of wives have unsatisfactory knowledge regarding factors that increase the chances of IVF success, required medications, instructions followed after the procedure, and complications of IVF process. This finding was in harmony with **Omokanye, et al., (2017)** who carried out a cross-sectional descriptive study of consecutively consenting infertile couples seen at the ART unit of the Department of Obstetrics and Gynecology, University of Ilorin Teaching Hospital, Ilorin, they found that 56.7% were aware that the procedure could fail. This finding was also, supported by **Abolfotouh, (2013)** who describe wives involvement in the management of infertile couples at Kenyatta National Hospital, who found that wives participants' knowledge of IVF was generally poor.

Relate to knowledge of husband regarding IVF the current study showed that nearly three quarter of husbands have unsatisfactory knowledge regarding instructions followed before performing the procedure and instructions followed during performing the procedure. This finding was in the same line with **Sudha and Reddy, 2013**. Who conducted a study about "Causes of female infertility" and reported that: Regarding wives and husbands total knowledge regarding IVF process the finding of the current study indicated that less than two third of infertile couples have unsatisfactory level of knowledge regarding

IVF process. This finding was in agreement with **Marcia & Pasquale, (2015)** who conducted a study about "Knowledge and attitudes of infertile couples about assisted reproductive technology" and reported that, knowledge about IVF is inadequate in many parts of the world, there are a number of misconceptions regarding IVF all over the world, and must increase knowledge to achieve a better understanding of the level of awareness and misconceptions of IVF.

Conclusion:

The finding of the current study indicated that less than two third of infertile couples have unsatisfactory level of knowledge regarding IVF process. Furthermore, nearly three quarter of wives have unsatisfactory knowledge regarding factors that increase the chances of IVF success, required medications, instructions followed after the procedure, and complications of IVF process. While, nearly three quarter of husbands have unsatisfactory knowledge regarding instructions followed before and during the procedure.

Recommendation:

Based on the finding of the current study the following recommendation is suggested developing and implementation of educational programs regarding IVF process for infertile couples on IVF unit of Ain Shams Maternity University Hospital.

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