

# Effectiveness of Self-Care Management Instructional Program on Women's Knowledge undergoing In-Vitro Fertilization in Al-Najaf City

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**Abstract-** Self-care management, including the physical and psychological aspects, affects health and wellness. In vitro fertilization, lifestyle factors affect the production of oocytes, fertilization rates, miscarriage and pregnancy. The aim of study to assess the effectiveness of the instructional program on the women knowledge undergoing in-vitro fertilization/intracytoplasmic injection about self-care management A Study and Control Groups, Pre-Test and Post-Test (Quasi Experimental Design), were used to study the Effectiveness of Self-Care Management Instructional Program on Women's Knowledge undergoing In-Vitro Fertilization , from the period of 17th September 2018 to 4th July 2019. A non-probability (purposive sample) of (60) infertile women was included in the study. The sample is distributed as the study and control groups (30 women for the study group and 30 women for the control group). The study is conducted in Al-Najaf City/Al Sadder Teaching Hospital / Fertility Center data collected through the use of a questionnaire that was design and women interview, which included demographic characteristics, reproductive characteristics, and questions about women's knowledge about self-care management. Validity and reliability of the questionnaire were identified. The data was collected through the use and application of the instructional program for the study group using lectures, booklets and videos. Data analysis was performed through the application of descriptive and inferential statistical data analysis approaches. Results revealed that 83.3% of women had poor knowledge before intervention. However, 100.0% of them had good knowledge after one month of intervention. Moreover, that the women in the study group benefited from the application of the instructional program, there was a development and improvement in all the program information and application. The study revealed that there were statistically significant differences ( $p < .001$ ) in the study group between pre- and post-test in all items related to self-care management. The study concluded that the implementation of the educational program was effective and clearly good and improved women's knowledge and awareness. The study recommended that instruction program be developed in all fertility centers in Iraq regarding self-care management before, during and after IVF/ICSI and that the nurse must take the role in teaching the women about self-care management.

**Index Terms-** instructional program, self-care management, in vitro fertilization.

## I. INTRODUCTION

Infertility is the impaired of ability to pregnant after a year of not protected regular sex. According researchers, it affects more than 15% of couples worldwide and is recognized as a health problem [1].

According to WHO, in developing countries, one in four couples suffers from infertility [2]. The centers for disease control and prevention (CDC, 2015) apprise that 6% of married women between the ages of 15 and 44 years in the United States of America suffer from infertility and that on 12% of women age 15-44 years. In addition in 2013 it was apprise that 7.4 million women in the United States of America had used some form of infertility treatment. Assisted Reproductive Technology comprises all fertility treatments in which both eggs and embryos are treated outside the body. In general, Assisted Reproductive therapy involves the removal of mature Oocytes from the ovaries using a thin needle, a combination of eggs and sperm in the laboratory, and the return of embryos to the woman body. And the basic form of assistive techniques was in vitro fertilization / ICSI [3].

To increase the number of patients receiving infertility treatment by assisted reproduction techniques. Modification in lifestyle factors prior to treatment can lead to a natural improvement in fertility and can reduce the requirements of in vitro fertilization treatment procedures. Recent studies indicates that infertility is also Caused due to lifestyle situation , so it is necessary to make an awareness in the young people regarding the causes & advanced treatment modalities for Infertility [4]. Most women undergoing IVF/ICSI are ready to modify lifestyle behavior and are therefore aware of the lifestyle changes they can make to enhance and improve the success of IVF [5].

While there is a great deal of health care, time and manpower in the search for and treatment of infertility, doctors ignoring the full care of the person as a whole. Factors influencing QoL quality are likely to be identified Improve care and compliance of infertile women [6]. Self-care describes the preservation of health, prevention and treatment of disease by the individual. Proving to improve patient satisfaction, quality of life. The four components of self-care lead a healthy lifestyle, treat simple illnesses, manage chronic diseases and care after leaving the hospital[7]. Moreover, there is increasing evidence that self-

care in chronically ill patients is associated with improved quality of life [8].

Self-care for women’s undergoing IVF includes lifestyle measures such as maintaining a healthy weight and nutrient intake as accurately as possible vitamin and antioxidant supplementation, as well as adhering to medication, exercise, psychological stress, Increase intake of caffeine , alcohol consumption and exposure to environmental pollutants to help women accomplish healthy Pregnancy[9].The nurse is responsible for the continuous assessment of the patient and generally begins multidisciplinary care when the physical, emotional or social conditions of the patient are required. Patient and family education and continuous self-care support are additional services provided by the nurse.

II. METHODOLOGY:

**Design of the study:**

A quasi-experimental design is used through the present study in order to achieve the objectives of the study. The period of the study is from 17th September 2018 to 1<sup>st</sup> July 2019.

**Setting of the study:**

The study was conducted in Al-Najaf City/Al-Najaf Al-Ashraf Health Directorate / Al-Sadder Medical City /fertility center.

**Sample of the study:**

A Non-Probability (Purposive Sample) ,consist of 60 women. The sample is divided in two groups; 30 women as study group are exposed to the instructional program, and the other 30 women not exposed to the instructional program considered as a control group.

**Tools of Data Collection:** It includes three main parts:

**Part I: Self-administered questionnaire sheet related to socio-demographic data of the women’s:**

This part is concerned with the collection of basic socio-demographic data; this part is filled by the women (age, residency, level of education, occupation status, cigarette smoker and smoking type.

**Part II: Self-administered questionnaire sheet related to personal data of the women.**

This part is concerned with the collection of basic personal data, this part is filled by the women (infertility type, number of IVF/ICSI cycle have you done in the past, number of abortion have you gotten due to IVF/ICSI.

**Part III: Self-administered questionnaire sheet associated with self-care management on the women’s knowledge undergoing IVF/ICSI.**

It is constructed to assess general knowledge of women with regard to self-care management and increasing the chances of pregnancy.. The questionnaire sheet is also complete by the women, the study purpose is explained erstwhile to get questionnaire sheet. The contributors are demanded to answer the questionnaire. This knowledge test is composed of (25) multiple choice question (in vitro fertilization description, infertility reasons and information about IVF consideration, success rate, process steps, Physical self-care, and psychological self-care). The test is covered with the relevant points from the major content area of instructional program. For the purpose of this study, the number of correct responses of the knowledge questionnaire is used as the measure of the level of knowledge. Each question is scored as the correct answer get (2) point and the incorrect answer get (1) point.

III. STUDY RESULTS:

**Table (1) Socio- Demographic Data of the Study Sample NO. =60 (study and Control Groups)**

Socio-Demographic Data	Rating And Intervals	Grouping	
		Study Freq. / %	Control Freq. /%
Female age / years	20-24	1	5
		3.3%	16.7%
	25 – 29	8	6
		26.7%	20.0%
	30 – 34	8	9
26.7%		30.0%	
35 – 39	8	3	
	26.7%	10.0%	
40+	5	7	
	16.7%	23.3%	
Male age / years	25 – 29	3	5
		10.0%	16.7%
	30 – 34	8	9
26.7%		30.0%	

	35 – 39	8	7
		26.7%	23.3%
	40+	11	9
		36.7%	30.0%
Residency	Rural	18	24
		60.0%	80.0%
	Urban	12	6
		40.0%	20 %
Levels of education	Unable to read & write	2	1
		6.7%	3.3%
	Read & Write	4	5
		13.3%	16.7%
	Primary school graduate	5	5
		16.7%	16.7%
	Intermediate school graduate	11	14
		36.7%	46.7%
	Secondary school graduate	4	0
		13.3%	.0%
Institute graduate	1	1	
	3.3%	3.3%	
College and above graduate	3	4	
	10.0%	13.3%	
Occupation	Housewife	26	27
		86.7%	90.0%
	Employee	4	3
		13.3%	10.0%
Smoking	Yes	1	0
		3.3%	.0%
	No	29	30
		96.7%	100.0%
Smoking type	active	0	1
		.0%	3.3%
	Passive	30	29
		100.0%	96.7%

**Table(1)** shows the socio-demographic data of study group which as females were 26.7 % For three age groups 25-29,30-34 , 35-39 years old, 60.0% of them was residency Of urban, 36.7% Intermediate school graduated , (86.7%) she was housewife, 96.7% from women not smoking , 100% of them was passive smokers. The socio-demographic of control group was 30% of the sample was female, at age 30-34 years old and male were 30% for two age groups 30-34 ,40 and over, 80% of them was urban residency , 46.7% Intermediate school graduated, 90% she was Housewife,100% from women not smoking, 96.7% of them was passive smokers .

**Table (2) assessment of the Study Sample Responses at the Pre-Test for Both Study and Control Groups**

Items	Responses	Grouping					
		Study			Control		
		Freq. (%)	Mean	Assessment	Freq. (%)	Mean	Assessment
what is IVF	Incorrect	20	1.33	Fail	17	1.43	Fail
		66.7%			56.7%		
	Correct	10			13		
		33.3%			43.3%		
What are the causes of infertility and late procreation	Incorrect	24	1.20	Fail	19	1.37	Fail
		80.0%			63.3%		
	Correct	6			11		
		20.0%			36.7%		
What are the possible complications of treatment	Incorrect	27	1.10	Fail	21	1.30	Fail
		90.0%			70.0%		
	Correct	3			9		
		10.0%			30.0%		
The success rate of IVF in women aged 30-35	Incorrect	9	1.70	Pass	14	1.53	Pass
		30.0%			46.7%		
	Correct	21			16		
		70.0%			53.3%		
Your commitment with health care provider guidelines	Incorrect	8	1.73	Pass	7	1.77	Pass
		26.7%			23.3%		
	Correct	22			23		
		73.3%			76.7%		
The day of the egg retrieval process should be fasting at least..... hours:	Incorrect	20	1.33	Fail	12	1.60	Pass
		66.7%			40.0%		
	Correct	10			18		
		33.3%			60.0%		
What is the period of rest and relax after the embryo transfer.....	Incorrect	16	1.47	Fail	18	1.40	Fail
		53.3%			60.0%		
	Correct	14			12		
		46.7%			40.0%		
What is the adequate sleep hours during day	Incorrect	9	1.70	Pass	16	1.47	Fail
		30.0%			53.3%		
	Correct	21			14		
		70.0%			46.7%		
What are the right ways to make your sleep healthy	Incorrect	22	1.27	Fail	21	1.30	Fail
		73.3%			70.0%		
	Correct	8			9		
		26.7%			30.0%		
What are the risks of exercise and hot baths	Incorrect	15	1.50	Pass	15	1.50	Pass
		50.0%			50.0%		
	Correct	15			15		
		50.0%			50.0%		
What chemicals do you avoid during the I.C.S.I	Incorrect	6	1.80	Pass	13	1.57	Pass
		20.0%			43.3%		
	Correct	24			17		
		80.0%			56.7%		

What is the benefit of eating large amounts of fruits and vegetables during the ICSI	Incorrect	16 53.3%	1.47	Fail	12 40.0%	1.60	Pass
	Correct	14 46.7%			18 60.0%		
How many cups are recommended for drinking water	Incorrect	17 56.7%	1.43	Fail	24 80.0%	1.20	Fail
	Correct	13 43.3%			6 20.0%		
What foods do we avoid during ICSI	Incorrect	16 53.3%	1.47	Fail	10 33.3%	1.67	Pass
	Correct	14 46.7%			20 66.7%		
What is the benefit of iron-rich foods such as green leaves and peas during ICSI	Incorrect	27 90.0%	1.10	Fail	22 73.3%	1.27	Fail
	Correct	3 10.0%			8 26.7%		
What is the benefit of zinc intake during the ICSI	Incorrect	23 76.7%	1.23	Fail	23 76.7%	1.23	Fail
	Correct	7 23.3%			7 23.3%		
What is the recommended daily amount of whole fat milk that helps boost your fertility	Incorrect	21 70.0%	1.30	Fail	17 56.7%	1.43	Fail
	Correct	9 30.0%			13 43.3%		
What is the benefit of vitamin D during ICSI	Incorrect	24 80.0%	1.20	Fail	19 63.3%	1.37	Fail
	Correct	6 20.0%			11 36.7%		
What is the benefit of taking fish oil during ICSI	Incorrect	21 70.0%	1.30	Fail	21 70.0%	1.30	Fail
	Correct	9 30.0%			9 30.0%		
What is the benefit of dietary supplement Q-Enzyme 10 during ICSI	Incorrect	24 80.0%	1.20	Fail	21 70.0%	1.30	Fail
	Correct	6 20.0%			9 30.0%		
The most important ways to relieve stress	Incorrect	14 46.7%	1.53	Pass	16 53.3%	1.47	Fail
	Correct	16 53.3%			14 46.7%		
What is the benefit of emotional freedom technique to reduce stress	Incorrect	25 83.3%	1.17	Fail	24 80.0%	1.20	Fail
	Correct	5 16.7%			6 20.0%		
The importance of applying deep breathing exercise	Incorrect	18 60.0%	1.40	Fail	18 60.0%	1.40	Fail
	Correct	12 40.0%			12 40.0%		
What is the benefit of mindfulness	Incorrect	19 63.3%	1.37	Fail	21 70.0%	1.30	Fail
	Correct	11			9		

		36.7%			30.0%		
To reduce negative emotions we use.....	Incorrect	25	1.17	Fail	22	1.27	Fail
		83.3%			73.3%		
	Correct	5			8		
		16.7%			26.7%		

Results in **table (2)** shows the women responses for question concerning their knowledge toward self-care management at pretest for (study and control groups) whereas most they have been fail knowledge.

**Table (3) assessment of the Study Sample Responses at the Post-Test for Both Study and Control Groups**

Items	Responses	Grouping					
		Study			Control		
		Freq. (%)	Mean	Assessment	Freq. (%)	Mean	Assessment
what is IVF	Incorrect	10	1.66	Pass	14	1.53	Pass
		33.3%			46.7%		
Correct	20	16					
	66.7%	53.3%					
What are the causes of infertility and late procreation	Incorrect	3	1.90	Pass	14	1.53	Pass
		10.0%			46.7%		
Correct	27	16					
	90.0%	53.3%					
What are the possible complications of treatment	Incorrect	13	1.56	Pass	18	1.40	Fail
		43.3%			60.0%		
Correct	17	12					
	56.7%	40.0%					
The success rate of IVF in women aged 30-35	Incorrect	3	1.90	Pass	17	1.43	Fail
		10.0%			56.7%		
Correct	27	13					
	90.0%	43.3%					
Your commitment with health care provider guidelines	Incorrect	0	2	Pass	8	1.73	Pass
		.0%			26.7%		
Correct	30	22					
	100 %	73.3%					
The day of the egg retrieval process should be fasting at least..... hours:	Incorrect	0	2	Pass	14	1.53	Pass
		.0%			46.7%		
Correct	30	16					
	100 %	53.3%					
What is the period of rest and relax after the embryo transfer.....	Incorrect	1	1.96	Pass	18	1.40	Fail
		3.3%			60.0%		
Correct	29	12					
	96.7%	40.0%					
What is the adequate sleep hours during day	Incorrect	1	1.96	Pass	14	1.53	Pass
		3.3%			46.7%		
Correct	29	16					
	96.7%	53.3%					
What are the right ways to make your sleep healthy	Incorrect	4	1.86	Pass	18	1.40	Fail
		13.3%			60.0%		
Correct	26	12					
	86.7%	40.0%					
	Incorrect	2	1.93	Pass	16	1.46	Fail

What are the risks of exercise and hot baths		6.7%			53.3%		
	Correct	28			14		
		93.3%			46.7%		
What chemicals do you avoid during the I.C.S.I	Incorrect	0	2	Pass	11	1.63	Pass
		.0%			36.7%		
	Correct	30			19		
What is the benefit of eating large amounts of fruits and vegetables during the ICSI	Incorrect	4	1.86	Pass	13	1.56	Pass
		13.3%			43.3%		
	Correct	26			17		
How many cups are recommended for drinking water	Incorrect	3	1.90	Pass	22	1.26	Fail
		10.0%			73.3%		
	Correct	27			8		
What foods do we avoid during ICSI	Incorrect	2	1.93	Pass	10	1.66	Pass
		6.7%			33.3%		
	Correct	28			20		
What is the benefit of iron-rich foods such as green leaves and peas during ICSI	Incorrect	3	1.90	Pass	21	1.30	Fail
		10.0%			70.0%		
	Correct	27			9		
What is the benefit of zinc intake during the ICSI	Incorrect	11	1.63	Pass	18	1.40	Fail
		36.7%			60.0%		
	Correct	19			12		
What is the recommended daily amount of whole fat milk that helps boost your fertility	Incorrect	4	1.86	Pass	20	1.33	Fail
		13.3%			66.7%		
	Correct	26			10		
What is the benefit of vitamin D during ICSI	Incorrect	7	1.76	Pass	21	1.30	Fail
		23.3%			70.0%		
	Correct	23			9		
What is the benefit of taking fish oil during ICSI	Incorrect	2	1.93	Pass	19	1.36	Fail
		6.7%			63.3%		
	Correct	28			11		
What is the benefit of dietary supplement Q-Enzyme 10 during ICSI	Incorrect	13	1.56	Pass	18	1.40	Fail
		43.3%			60.0%		
	Correct	17			12		
The most important ways to relieve stress	Incorrect	9	1.70	Pass	16	1.46	Fail
		30.0%			53.3%		
	Correct	21			14		
What is the benefit of emotional freedom technique to reduce stress	Incorrect	6	1.80	Pass	22	1.26	Fail
		20.0%			73.3%		
	Correct	24			8		
	Incorrect	4	1.86	Pass	16	1.46	Fail



The importance of applying deep breathing exercise		13.3%			53.3%		
	Correct	26			14		
		86.7%			46.7%		
What is the benefit of mindfulness	Incorrect	1	1.96	Pass	19	1.36	Fail
		3.3%			63.3%		
	Correct	29			11		
		96.7%			36.7%		
To reduce negative emotions we use.....	Incorrect	4	1.86	Pass	21	1.30	Fail
		13.3%			70.0%		
	Correct	26			9		
		86.7%			30.0%		

Results in **table (3)** shows the women responses for questions concerning their knowledge toward self-care management at post- test for control groups whereas most they have been fail in the test. Study group of all of them (100%) are good in same test in post-test after exposed to instructional sessions.

**Table (4) pregnancy test for study and control groups**

Pregnancy test results	Statistical Parameters	Grouping	
		Study	Control
positive	Freq.	8	3
	%	26.7%	10.0%
negative	Freq.	22	27
	%	73.3%	90.0%
Total	Freq.	30	30
	%	100.0%	100.0%

Results in **table (4)** shows pregnancy test for (study and control groups) whereas study group (26.7%) positive after increasing knowledge and adhering of instructional program. while the control group (10%) positive.

**Table (5) mean difference (independent sample t-test) between the study and control group responses at pre-test and post –test**

Periods of measurements	Groups	N	Mean	Std. Deviation	t-value	d.f.	p-value
Pre-test	Study	30	1.378	.103	1.060	58	.293 NS
	Control	30	1.409	.1203			
Post-test	Study	30	1.8533	.07884	13.901	58	.001 HS
	Control	30	1.4427	.14130			

The results of **table (5)** show a highly significant difference which found between the pre-test and post-test of the study group who are participated in the instructional sessions and the control group who did not exposed to any intervention related to knowledge at p-value (0.001).

**Discussion**

**1. Discussion of the Socio-Demographic and reproductive Data related to the Women’s undergoing In Vitro Fertilization / ICSI:**

the present study highlights the contributions of some demographic variables for women who review the fertility center in Najaf, most of them aged (25-29 , 30-34 , 35-39) 26% of the

study group and (30-34) 30% of the control group. This result corresponds to the Omu and Alexander (2010) conducted in Kuwait, where it showed that the age of 20-29 years old is the dominant age[10]. .This results may come because women in this age are more likely to be pregnant and this age group is a preferable for pregnancy, so they seeking for fertility treatment. also our study is agree with the study of Dunson and other in 2004 Women aged 19–26 years had significantly higher probabilities of pregnancy than women aged 27–29 years . Women aged 30–34 years were similar to the 27 to 29-year-olds, but women aged 35–40 years had further reductions in their probabilities of pregnancy [11].



Age of male is expected to negatively affect semen quality. Testicular changes in age are associated with a lack of T levels. In this study, a high percentage of the study group was found in control of men between the ages of (30, 34 and 40 +) This is consistent with Mehdi in 2007, indicating a decrease in the parameters of sperm and semen with age, decrease of movement of Sperm in general by 7% / year with a decrease in the size of sperm by 3.1% / year as the volume of semen decreases 10% at the age of 30 years so the patient should be aware of each of the factors mentioned [12].

In terms of residence, the study shows that a high percentage of the study group (60%) and the control group (80%) live in urban areas. This is in agreement with Abdullah in 2016, indicating that 72% of them live in urban areas. This result matches with the result of Saoji (2014) who mentioned that most study group are living in urban residential area, while most control group are from rural area. This result may come due to women who live in urban more vulnerable to pollutants and chemicals such as; polluted air from factories, vehicles and electric generators. In addition, frequent use of detergents, cosmetic and pesticides [13][14].

With regard to the level of education, the study revealed that the highest percentage of the study sample of the two groups control and study are middle school graduates. This may be because most of the women have not been able to complete their education because of the circumstances and the nature of our Iraqi society. In addition, this result may be due to the continuing economy, political crises and wars that our country suffered from the beginning of the 1980s until this time. Asmail and Moussa 2017 noted that highly educated women are more likely to use problem-focused approaches, such as doing something about a problem, identifying the cause, thinking about the situation, and looking for information. relatively high levels of education are associated with positive health behaviors and can lead to the assumption of more adaptive coping strategies [15].

The current study indicated that the highest percentage of women in the study group 86% and the control group 90% are housewives. These results are consistent with those of AbudlAzeez *et al.*, (2019), where the majority of the 82% of women are housewives and have no personal income. These results are related to our communities that encourage females to be housewives and care for their families and their children. This result is due to the lack of government jobs in the country and no other source of financial support. These results coincide with Hamad's (2009) For females are housewives and their husbands are self-employed. For working women, chemicals can be inhaled either through environmental exposure or potential exposure in the workplace [16].

With regard to smoking and passive smoking, most of the study sample of the two groups control and study are non-smokers but are highly exposed to secondhand smoke, and this result agrees with Amirkhani and others. (2014) as well as Abdullah (2016), who stated that "the high percentage of the study group and the control group are passive smokers." The proportion of smokers in women of childbearing age has increased significantly in the last 30 years (WHO, 2007). Unfortunately, most women are unaware of the relationship between smoking and infertility (Ruth and Taylor, 2001). The relationship between smoking and infertility in women has been discussed in many studies. Cigarette smoke

contains many toxic substances known to be related to fertility, endocrine disorders, and onset of early menopause, early ovarian failure, and reduced rate of implantation (ASRM, 2018). Thus, cigarette smoking can lead to a bad diagnosis of assisted reproductive technologies [17][18][19][20].

## **2. Discussion of the assessment of the study sample responses at the pre-test and post-test for both study and control groups Related to the Women's undergoing In Vitro Fertilization / ICSI:**

After implementation of the instructional program for the study group improved their knowledge about self-care management and increased their interest in adjusting their lifestyle to increase the chance of pregnancy. These results are consistent with a study carried out by Neamah and others (2018) in Iraq / Baghdad where Neamah said that results in both groups (study And control) in the pre-test have low knowledge about fertility and artificial insemination. After the implementation of the educational program of the study group, the couple to improve knowledge about artificial insemination. This study shows the importance of the educational program on knowledge of infertile couples who have increased knowledge of infertile couples after the implementation of the educational program [21].

## **3. Discussion of the Pregnancy Test for Study and Control Groups:**

In this study, the adherence to the guidelines of the program on self-care management for women undergoing IVF/ICSI increases the chances of pregnancy and the success of the IVF process. Within a month of follow-up with each woman, the results showed that the group that underwent instruction sessions achieved pregnancy by a percentage of 26.7%. Commitment and instruction have a potential effect of reducing stress and increase the chance of pregnancy potential because the intensity and tension greatly reduces the probability of pregnancy and there are further reviews prove this and this is consistent with the results of Boivin and de Liz and Strauss, which investigated the effectiveness of psychological interventions for infertility also, The results of the systematic review and meta-analysis conducted by Hammerli *et al.*, which analyzed the effectiveness of psychiatric interventions for infertile patients, suggest that psychological interventions such as instruction, educational intervention and relaxation improve the chances of some patients becoming pregnant and having a significant impact on pregnancy rate. The results of a study conducted in Iran in 2017 on 1079 infertile women that there is a positive impact of counseling on pregnancy rate  $p : 0.00$  [22][23].

## **4. Discussion the effectiveness of the instructional program on the knowledge of women undergoing IVF/ICSI self-care management for study and control groups**

Table (6) presents highly significant difference between the results of the post- test of the study group and the control group that demonstrates the effectiveness of the instructional program in self-care management for women. The study of self-care was associated with a significant increase in knowledge and positive attitudes in the intervention group, This study was agreed with a study conducted at Kamal Al-Samarae Hospital in Baghdad by Neamah and others in 2018. It explained that the implementation

of the educational program increases and improves the knowledge of infertile couples towards artificial insemination. There is a statistical significance between the knowledge about artificial insemination of the study groups and post-test observation, and in another study conducted in Egypt in 2018 on 100 infertile women as it revealed that 49.0% of women had weak knowledge before intervention. However, 73.0% of them had good knowledge after one month of consecutive intervention. In addition, there was a statistically significant relationship ( $P < 0.01$ ) between the sex function scores of infertile women before and one month of intervention. Also, only 4.0% of the women studied had a positive attitude towards adaptation to infertility before intervention. At the same time, after one month of intervention, the positive attitude changed to 92.0%, respectively[24].

#### IV. CONCLUSION:

In the light of this study, we can conclude that there has been a significant improvement in women's knowledge, practices and attitudes regarding self-care management after the instructional program. There was a positive correlation between women's knowledge and attitude before and after intervention. In addition, given the hypothesis of the alternative study to predict the positive affected of the program's effectiveness on self-care management on the women's knowledge undergoing IVF/ICSI, as demonstrated by this effect, there is no evidence of acceptance of the null hypothesis. Otherwise, the alternative hypothesis is accepted.

#### V. RECOMMENDATIONS:

1. All fertility centers in Iraq should include an instructional program of self-care management for women undergoing IVF
2. Using different types of mass media to increase women awareness about advance maternity treatment for infertility
3. Conduct training programs for all nurses in fertility centers to enable them to educate women about infertility treatments and self-care management.
4. Further studies should be made to find the national prevalence of infertility among Iraqi women for infertility treatment and self-care management.

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