Effectiveness Of An Education Program On Infertile Couple's Knowledge Toward Artificial Insemination At Kamal Al - Samaraee Hospital / Fertility And In Vitro Fertilization Center

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Abstract:
Background: *Artificial insemination is one of simplest, earliest procedure used in assisted reproductive technology(ART),used to treat some causes of infertility.*
Objectives: *To assess infertile couple's knowledge toward artificial insemination.*
Methodology: *A quasi- experimental design was conducted on non- probability sample (purposive) of (60) infertile couples, (30) of them as a study group and (30) as a control group, referred to artificial insemination in Kamal Al-Samaraee Hospital, for the period from 11/ February /2018 to25/March/2018. A questionnaire was used as an instrument for data collection. It was designed to identify infertile couple's knowledge toward artificial insemination before and after implementation of an education al program for both groups study and control. Descriptive and inferential statistical analyses were used to analyze the data.*
Results: *The results of the present study show that both groups (study and control) in pre-test have low level of knowledge toward artificial insemination.*
Conclusion: *It is concluded that the level of knowledge toward artificial insemination have been increased after implementation of the instructional program.*
Recommendations: *It is recommended that the nurse should take responsibility in explaining and giving knowledge about artificial insemination to infertile couples, and encouraging them to apply certain recreation to improve their psychological and social relationships.*
Keywords: *Artificial Insemination, Infertile Couple's, knowledge*

I. Introduction

Artificial insemination, also known as intrauterine insemination (IUI), is the simplest, earliest assisted reproductive technologies (ART). The procedure involved taking sperm sample from a partner or donor to inserted into woman's vagina during ovulation time to increase the chance rate of fertilization with pregnancy occurs in future .

IUI is a first step in assisted reproductive technology to treat some causes of infertility as: cervical factor, the male factor, the immunological factor, stage one and two endometriosis, also, infertility of an unknown cause (unexplained infertility) [1]. It is less invasive, inexpensive, easy procedure, easy technique to learn it includes special advantages with minimal equipment required, in addition to less psychological burden on the couple when compared to IVF/ICSI[2].

The success rates of IUI are affected by many factors such as: age, body mass index, type of infertility (primary or secondary), duration of infertility, stimulation ovulation protocol, endometrial thickness(volume) , timing of IUI and semen parameters characteristics, like post wash motility, morphology and total motile fraction[3] .

II. Methodology

A quasi- experimental study design was carried out in Kamal Al-Samaraee Hospital. A non- probability (purposive) study sample of (60) women, (30) for the study group and (30) for the control group referred to artificial insemination. Data collection: Was done through by interview the questionnaire underlying the present study, Questionnaire was consisted of five parts: Socio-demographic characteristics, Reproductive characteristics, sexual status, Food and Herbs pattern and Habits Assessment of Couple's knowledge. Validity

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of the instrument was established through a panel of (14) experts, and reliability by using test and retest approach. The data were analyzed approach by using (SPSS 20) using descriptive and inferential statistical test for data analysis.

Ethical Consideration: Oral permission was obtained from every infertile couple prior to data collection to participate in the study, and before the implementation of the program the researcher explained the importance of the study and participation from the sample was voluntary so they could withdraw from the study also the couples were assured that the study would not cause any physical harm to them.

III. Results
Table (1): Distribution of Socio-Demographic Characteristics for Study & Control Groups.

Socio-Demographic Variables	Study group (n=30)		Control group (n=30)		χ^2	Df	P-value	Sig
Level of Education for wife of the Study Sample								
Primary school graduate	6	20.0	8	26.7	19.071	4	0.032	NS
Intermediate school graduate	11	**36.7**	14	**46.7**				
Secondary school graduate	5	16.7	3	10				
Institution graduate	3	10.0	0	0				
College and above graduate	5	16.7	5	16.7				
Level of Education for husband of the Study Sample								
Primary school graduate	10	**33.3**	9	30	17.554	4	0.351	NS
Intermediate school graduate	5	16.7	13	**43.3**				
Secondary school graduate	2	6.7	2	6.7				
Institution graduate	4	13.3	2	6.7				
College and above graduate	9	30.0	4	13.3				
Occupation Status for wife the Study Sample								
Housewife	25	**83.3**	25	**83.3**	1.200	1	0.273	NS
Government Employee	5	16.7	5	16.7				
Occupation Status for husband for the Study Sample								
Retired	1	3.3			0.498	2	0.779	NS
free business	18	**60.0**	26	**86.7**				
Government Employee	11	36.7	4	13.3				

χ^2: **chi-squ, df: degree of freedom, P-value, Sig: Significant.**

Table (1): shows that the highest percentage of the study group (36.7%) and (46.7%) of the control group, their level of education for wives were intermediate school graduate.

Level of Education of husbands: The highest percentage of the study group (33.3%) are Primary school graduate and (43.3%) of the control group are Intermediate school graduate.

Occupation of wife: The same highest percentage of the study group and control group (83.3%), are housewives, regarding the occupational status of husbands, (60.0%) of the study group and (86.7%) of the control group are free business.
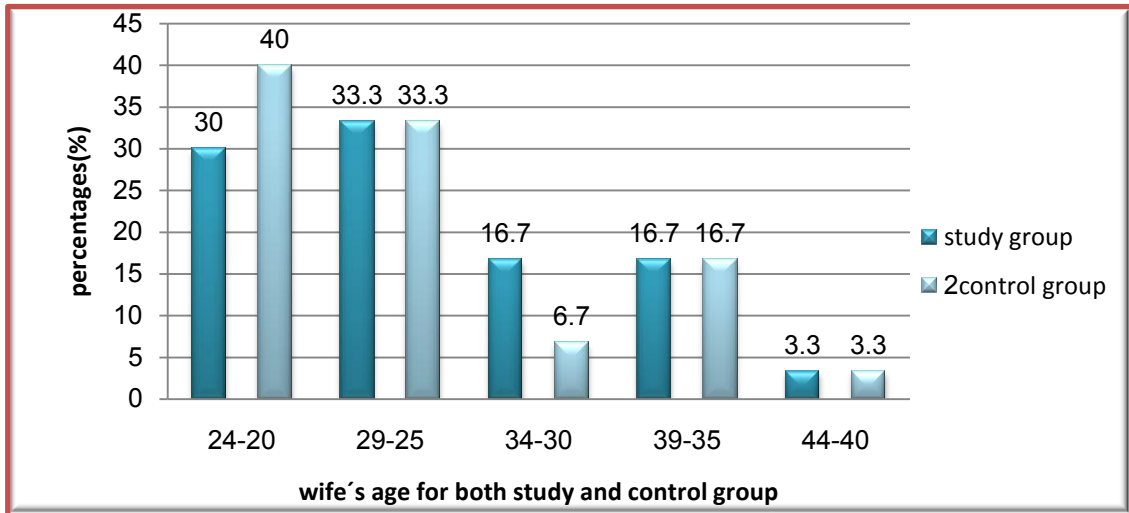
Figure (1): Distribution of Wife's Age for Study & Control Groups.

Figure (1): Regarding the age of wives, shows that the highest percentage of the study group (33.3%) are (25-29) years old with ($\bar{x} \mp SD$) (28.20±6.23) and (40%) of the control group are (20-24) years old with ($\bar{x} \mp SD$)(27,50 ±5.80).
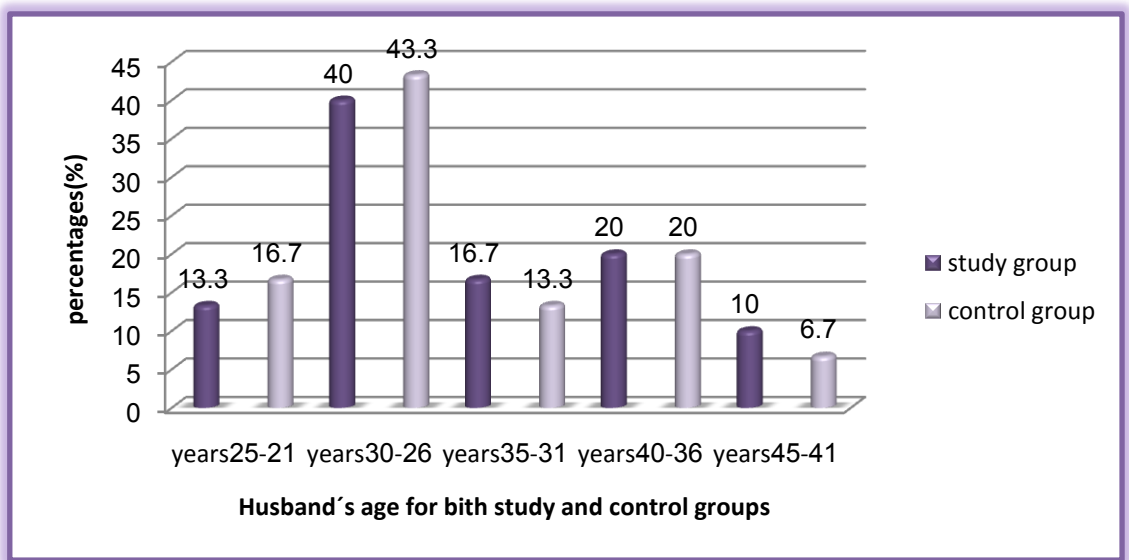

Figure (2): Distribution of husband's Age for Study & Control Groups.

Figure(2): Concerning the age of husbands, shows that the highest percentage of the study group (40.0%) their age between 26-30 years while 43% their age between 26-30 years of control group.

Table (2): Distribution of Reproductive characteristics for Study & Control Groups.

Reproductive characteristics	Study group (n=30)		Control group (n=30)		χ^2	df	P-value	Sig
Period of infertility by years	No	%	No	%				
2-6	15	**50.0**	18	**60**				
7-11	13	43.3	5	16.6	7.025	3	0.319	NS
12-16	2	6.7	4	13.3				
17-21	0	0	3	10				
Infertility in the family								
Yes	3	10.0	7	23.3				
No	27	**90.0**	23	**76.7**	1.014	1	0.314	NS
Consanguinity								
Yes	14	46.7	17	**56.7**	0.002	1	0.961	NS
No	16	**53.3**	13	43.3				
Regularity of menstrual cycle								
Yes	29	**96.7**	26	**86.7**	0.159	1	0.690	NS
No	1	3.3	4	13.3				

χ^2: chi-squ, df: degree of freedom, P-value, Sig: Significant, NS: non Significant .

Table (2): shows that the highest percentage of the study group (50.0%) and (60%) of the control group, their period of infertility were ranged between 2-6 years.

Infertility in the family: The highest percentage of the study group (90.0%) and (76.7%) of the control group, did not have infertility among their family.

Consanguinity: The highest percentage of the study group(53.3%), there is no any consanguinity between them and (56.7%) of the control group, had consanguinity between them.

Regularity of menstrual cycle: The highest percentage of the study group(96.7%) and (86.7%) of the control group had regular menstrual cycle.

Table (3): Distribution of Sexual status for Study & Control Groups.

Sexual status	Study group (n=30)		Control group (n=30)		χ^2	df	P-value	Sig
Regularity of intercourse in ovulation days	No.	%	No.	%	0.085	1	0.770	NS
Yes	22	**73.3**	20	**66.7**				
No	8	26.7	10	33.3				
Uses of pillow under the back after intercourse								
Yes	11	36.7	7	23.3	5.286	1	0.021	S
No	19	**63.3**	23	**76.7**				
washing vagina after intercourse								
Yes	9	30	19	**63.3**	0.062	1	0.804	NS
No	21	**70**	11	36.7				
Uses of vaginal douching after intercourse								
Yes	4	13.3	5	16.7	0.923	1	0.337	NS
No	26	**86.7**	25	**83.3**				
Feeling with pain during intercourse								
Yes	5	16.7	4	13.3	0.923	1	0.337	NS
No+	2+5	**83.3**	26	**86.7**				

χ^2: chi-squ, df: degree of freedom, P-value, Sig: Significant, NS: Not Significant.

Table (3): shows that the highest percentage of the study group (73.3%) and (66.7%) of the control group, had Regular intercourse in ovulation days

Uses of pillow under the back after intercourse: The highest percentage of the study group (63.3%) and (76.7%) of the control group, did not used pillow under the back after intercourse.

Washing vagina after intercourse: The highest percentage of the study group (70%), did not raised directly to wash vagina after intercourse and (63.3%) of the control group, raised directly to wash vagina after intercourse.
Uses of vaginal douching after intercourse: The highest percentage of the study group (86.7%) and (83.3%) of the control group, did not uses vaginal douching after intercourse.
Feeling with pain during intercourse: The highest percentage of the study group (83.3%) and (86.7%) of the control group, did not have pain during intercourse.

Table (4.): Distribution of Couples' Knowledge toward Artificial insemination in Pre -Test for Study & Control Groups

No.	Knowledge Items	Answer	Study group n=30 Pre-test No.	%	M.S	R.S	Ass	Control group n=30 Pre-test No.	%	M.S	R.S	Ass
1.	Artificial insemination is the injection of semen after treatment to improve intrauterine fertility in a timely manner for fertilization of oocytes	Yes	11	36.7	1.36	68	M	1	3.3		51.5	L
		No	19	63.3				29	96.7	1.01		
2.	The semen sample is taken from the husband for the purpose of artificial insemination after(2-3) days from abstinence from sexual intercourse	Yes	30	100	2.0	100	H	27	30	1.90	95	H
		No	0					3	10			
3.	Couples knowledge about used of artificial insemination	Yes	0	0	1.0	50	L	2	6.7	1.06	53	L
		No	30	100				28	93.3			
4.	In the case of artificial insemination, women advised to clear the cervix and increase the chance of pregnancy Emptying her bladder before Artificial insemi/nation and Refrain from urinating after Artificial insemination	Yes	8	26.7	1.26	63	M	5	16.7	1.16	58	L
		No	22	73.3				25	83.3			
5.	In Artificial insemination, sperm inserted into the uterine cavity through the cervix by Insert a thin catheter then push the sperm through the needle	Yes	18	60	1.60	80	M	16	53.3	1.53	76.5	M
		No	12	40				14	46.7			
6.	After artificial insemination, a woman is advised to remain lying on her back to increase the chances of pregnancy for a period of time (20-40) minutes	Yes	2	6.7	1.06	53	L	2	6.7	1.06	53	L
		No	28	93.3				28	93.3			
7.	Having intercourse after artificial insemination increases the chance of pregnancy	Yes	19	63.3	1.63	81.5	M	3	10	1.10	55	L
		No	11	36.7				27	90			
8.	Timing of artificial insemination	Yes	5	16.7	1.16	58	M	8	26.7	1.26	63	M
		No	25	83.3				22	73.3			
9.	It perfect to repeat artificial insemination if pregnancy not occurs	Yes	20	66.7	1.66	38	M	15	50	1.50	75	M
		No	10	33.3				15	50			
10	artificial insemination is legally permissible	Yes	30	100	2	100	H	30	100	2.0	100	H
		No	0	0				0	0			

M.S: Mean of score, R.S: Relative sufficiently, Ass: Assessment, L: Low, M: Moderate, H: High

Control Groups
M.S: Mean of score, R.S: Relative sufficiently, Ass: Assessment, L: Low, M: Moderate, H: High

Table (4): shows that most of the responses for both groups (study and control) group are moderate and low score for knowledge toward artificial insemination in pre –test.

Table (5) : Distribution of Couple's Knowledge toward Artificial insemination in Post -Test for Study & Control Groups.

No.	Knowledge Items	Answer	Study group n=30 Pre-test No.	%	M.S	R.S	Ass	Control group n=30 Pre-test No.	%	M.S	R.S	Ass
1.	Artificial insemination is the injection of semen after treatment to improve intrauterine fertility in a timely manner for fertilization of oocytes	Yes	27	90	1.90	98	H	6	20	1.20	69	L
		No	3	10				24	80			
2.	The semen sample is taken from the husband for the purpose of artificial insemination after(2-3) days from abstinence from sexual intercourse	Yes	30	100	2	100	H	27	90	1.90	95	H
		No	0	0				3	10			
3.	Couples knowledge about used of artificial insemination	Yes	24	80	1.80	90	H	2	6.7	1.06	53	L
		No	6	20				28	93.3			
4.	In the case of artificial insemination, women advised to clear the cervix and increase the chance of pregnancy Emptying her bladder before Artificial insemi/nation and Refrain from urinating after Artificial insemination	Yes	29	96.7	1.96	98	H	6	20	1.20	60	L
		No	1	3.3				24	80			
5.	In Artificial insemination, sperm inserted into the uterine cavity through the cervix by Insert a thin catheter then push the sperm through the needle	Yes	28	93.3	1.93	96.5	H	17	56.7	1.56	78	M
		No	2	6.7				13	43.3			
6.	After artificial insemination, a woman is advised to remain lying on her back to increase the chances of pregnancy for a period of time (20-40) minutes	Yes	25	83.3	1.83	91.5	H	2	6.7	1.06	53	L
		No	5	16.7				28	93.3			
7.	Having intercourse after artificial insemination increases the chance of pregnancy	Yes	29	96.7	1.96	98	H	4	13.3	1.13	56.5	L
		No	1	3.3				26	86.7			
8.	Timing of artificial insemination	Yes	28	93.3	1.93	96.5	H	15	50	1.50	75	M
		No	2	6.7				15	50			
9.	It perfect to repeat artificial insemination if pregnancy not occurs	Yes	30	100	2	100	H	18	60	1.60	80	H
		No						12	40			
10	artificial insemination is legally permissible	Yes	30	100	2	100	H	30	100	2	100	H
		No	0	0				0	0			

M.S: Mean of score, R.S: Relative sufficiently, Ass: Assessment, L: Low, M: Moderate, H: High

Table (5): shows that most of responses of study group are high and low for the control group for items related to knowledge toward artificial insemination in post –test.

Table (6): Summary of Statistics of Knowledge toward Artificial Insemination for Study Groups& Control Groups. (Pre-post- Test).

groups	Items	X̄	SD	GMS
study	**Knowledge toward Artificial insemination** (pre-test)	14.73	1.142	1.46
control	**Knowledge toward Artificial insemination** (pre-test)	13.63	0.764	1.36
study	**Knowledge toward Artificial insemination** (post-test)	19.33	0.88	1.93
control	**Knowledge toward Artificial insemination** (post-test)	14.23	1.04	1.42

X̄: mean, SD: Standard deviation, GMS: global Mean score

Table (4.6): shows that global mean score of knowledge toward artificial insemination for study and control groups in pre-test, and post-test for control group is low, while global mean score of knowledge toward artificial insemination for study group in post-test is high.

Table (7): The Association Between level of Knowledge toward Artificial insemination and Studied Variables for Study Groups (Pre- Test).

Studied Variables	χ^2	df	P-value	Sig	
Age for wife by Years	6.989	4	0.0136	S	
Age for husband by Years	12.358	4	0.015	S	
Body Mass Index	3.704	2	0.157		NS
Level of Education for wife of the Study Sample	7.934	4	0.094		NS
Level of Education for husband of the Study Sample	2.614	4	0.6224	NS	
Occupation Status for wife the Study Sample	0.136	1	0.712	NS	
Occupation Status for husband for the Study Sample	2.934	2	0.231	NS	
Period of infertility	6.346	2	0.042		NS
Infertility in the family	2.727	1	0.099		NS
Consanguinity	0.049	1	0.825		NS
Regularity of menstrual cycle	0.376	1	0.540		NS
Uses of caffeine	1.493	1	0.22		NS
Smoking For husband	0.682	1	0.409		NS
Indirect smoking For wife	1.224	1	0.269		NS
Use herbs to help reproduction	5.816	5	0.325		NS
Used foods that help increase fertility	4.998	4	0.288		NS
Regularity of intercourse in ovulation days	0.015	1	0.901		NS
Uses of pillow under the back after intercourse	3.135	1	0.077		NS
Do you rise directly to wash after intercourse	1.591	1	0.207		NS
Uses of douching after intercourse	0.007	1	0.935		NS
Feeling with pain during intercourse	0.136	1	0.712		NS

χ^2: chi-squ, df: degree of freedom, P-value, Sig: Significan

Table (7): shows that there are no statistical significant differences between Studied Variables and level of Knowledge toward artificial insemination, but there is a statistical significant difference between (Age of wife and husband) and level of knowledge toward artificial insemination for study group.

IV. Discussion

The findings of the present study show that both groups (study and control) in pre-test have low knowledge toward fertility and artificial insemination (as shown in table (4.6). After the implementation of the educational program for the study group, the couple's knowledge toward artificial insemination is improved.

The present study shows The importance of the educational program on the knowledge of infertile couples and who knowledge of infertile couples increased after implementation of the educational program, These results agree with a study conducted in Egypt by Soad et al.,[4] who study the Effect of an Educational Intervention for Infertile Women Regarding Natural Fertility Methods and Sexual Skills for Improving Sexual Function and the result the implementation of an educational intervention is effective and significantly improved women's knowledge, practice and attitude towards natural fertility methods and sexual skills.

The finding of study about Psychosocial interventions for infertile couples indicates that the psychosocial interventions in general improve psychological outcomes, marital relationships and pregnancy rates among infertile couples[5]. The present study shows that there are no statistical significant differences

between Studied Variables and level of Knowledge toward fertility and Artificial insemination, but there was statistical significant difference between (Age of wife and husband) and level of Knowledge toward fertility and Artificial insemination for study group in pr- test, (shown in table (4.7).

The result agrees with a study done by Linda et al., (2011) in Indonesia on 212 female Indonesian infertility patients[6]. Results revealed that there were no statistically significant relationships between patient characteristics (age, education level, Monthly cash income) and knowledge of reproduction and fertility.

V. Conclusion
The present study shows that the low level of knowledge toward artificial insemination for study and control groups in pre-test. The implementation of educational program increases and improves knowledge of infertile couples toward artificial insemination. There is a statistical significance between knowledge toward artificial insemination for study and control groups in post-test. There is a statistical significant between the age of wife and husband and the level of knowledge toward artificial insemination in pre-test for the study group. There was no statistical significant association between Studied Variables, socio- demographic variables, reproductive variables, sexual status variables, food and herbs uses variables, with the level of knowledge toward artificial insemination among the participants of the study group.

VI. Recommendations
1. Hospital should provide special room to every infertile couples to give the sample of seminal fluid.
2. Providing training courses and lectures to the nurses to increase their knowledge about artificial insemination.
3. Nurse should take responsibility in explaining and giving information about artificial insemination to infertile couples.
4. Advising infertile couples to improve their knowledge about artificial insemination and other assisted reproductive techniques (ART) through reading or internet and social media.
5. Encouraging the infertile couples to apply certain recreation to improve their psychological and social relationships.

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