

Couples Adjustment to Failed Assisted Reproductive Technology after Counseling

Safaa A. Hashim¹, Saher M. Soliman¹, Suzan E. Mansour²

¹Department of Maternal & Neonatal Health Nursing, Faculty of Nursing, Ain Shams University, Egypt

²Department of Maternal & Neonatal Health Nursing, Faculty of Nursing, El Mansoura University, Egypt

saharmossasoliman@yahoo.com

Abstract: This is an intervention study aimed to studying the effect of counselling on couples adjustment to failed assisted reproductive technology .It was conducted at IVF centre of Ain Shams Maternity University Hospital after obtaining faculty ethical committee approval. The **sample** was consisted of (110 couple: failed cases 59 and success cases 51). **Tools** used for data collection consisted of Couples' Structured Interviewing Questionnaire, Coping Strategy Stress Scale, Ways of Coping (WOC) Questionnaire, follow up card and PLISSIT Model for counselling program. **Results** revealed that couples included in the study ranged between 20-45 years, with a mean age of 30.36± 3.112 years for wives and 35.64±3.852 years for husbands. 67.3% of female were the cause of infertility, and 94.5% of couples had a previous trials of ART. Women have more (personal, social and marital) stressful experiences than men. While they both frequently use a combination of strategies to cope, study showed different coping behaviours to deal with their infertility (meaning-based coping & passive avoidance coping strategy), Husbands scores were significantly lower than before counselling with regard to passive avoidance strategy with $t=2.29$, and wives scores were significantly higher than before with regard to meaning-based strategy with $t=4.28$. **The study concluded** that counselling effective on couples' adjustment to failed assisted reproductive technology. The study **recommended** establishment of educational programs to enlighten infertile couples about treatment options and answer their questions and different coping strategies with failed assisted reproductive technology trials. [Safaa A. Hashim, Saher M. Soliman, Suzan E. Mansour. **Couples Adjustment to Failed Assisted Reproductive Technology after Counseling**. Nat Sci 2012;10(6):61-74]. (ISSN: 1545-0740). <http://www.sciencepub.net>. 10

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1. Introduction

Infertility primarily refers to the biological inability of a person to contribute to conception. Infertility may also refer to the state of a woman who is unable to carry a pregnancy to full term (*Lash et al, 2008*). Infertility defined as an inability of a couple to achieve pregnancy for at least one year of trying to do so without using any means of birth control (*Cooper et al, 2010.*) It is perceived as a problem across virtually all cultures and societies and affects an estimated 10-15% of couples of reproductive age. World Health Organization has been indicated that 8% to 12% of couples worldwide experience infertility (*Hsu and Kuo, 2002*).

In Egypt the incidence of infertility exactly can't be estimated but, according to researches it is estimated that the rates of primary and secondary infertility were 70.7% and 29.3% respectively among infertile couples (*Aflatoonian and Tabibnejad, 2009*)

There are two types of infertility, couples with primary infertility have never been able to conceive, while, on the other hand, secondary infertility is difficulty conceiving after already having conceived (and either carried the pregnancy to term, or had a miscarriage). Technically, secondary infertility is not present if there has been a change of partners (*Khan et al, 2005*).

Assisted Reproductive Technology (ART) is a general term referring to methods used to achieve pregnancy by artificial or partially artificial means. ARTs are different from other medical procedures because they do not extend or improve life, they create life. It is expensive, invasive, and involves some risk to women (*Schieve, 2002*). ART includes a range of methods used to treat human sub-fertility, including In Vitro Fertilization (IVF), Embryo Transfer (ET), Gamete Intra-Fallopian Transfer (GIFT), and all manipulative procedures involving gametes and embryos as well as treatment modalities to induce ovulation or spermatogenesis when used in conjunction with the above methods (*Assisted Reproduction Services, 2006*).

ART is a demanding and stressful treatment for patients, requiring daily hormone injections, ultrasound scans, semen analysis and invasive procedures, such as oocyte retrieval (*Macklon & Fauser, 2004*). Furthermore, IVF is usually the final treatment option for infertile couples, and failure will probably mean their remaining childless. It is therefore not surprising that both women and men demonstrate elevated levels of anxiety during IVF treatment, especially at oocyte retrieval and pregnancy testing. As a result, couples engage in a variety of coping strategies in an attempt to regain

control over their lives and rebalance the disruptions they have experienced in their personal, marital and social relationship (*De Klerk et al., 2008*).

Receiving a diagnosis of infertility again or failed ART is a significant life crisis (*Alesi, 2005*). Feelings of grief and loss are very common as couples come to terms with the fact that they are not able to conceive. Infertility may result in a decrease in quality of life and an increase in marital discord and sexual dysfunction. The burden of infertility is physical, psychological, emotional and financial. Other coping strategies to cope with the reality of prolonged childlessness are Denial coping strategies (*Van den Akker, 2005*).

Adjustment Coping is a way of controlling and regulating stress (*Lazarus and Folkman, 1984*). Coping strategies refer to the specific efforts, both behavioral and psychological, that people employ to master, tolerate, reduce, or minimize stressful events. Two general coping strategies have been distinguished: problem-solving strategies are efforts to do something active to alleviate stressful circumstances, whereas emotion-focused coping strategies involve efforts to regulate the emotional consequences of stressful or potentially stressful events. Research indicates that people use both types of strategies to combat most stressful events (*John and MacArthur, 1998*).

For men and women experiencing infertility, coping can play an important role in managing heightened demands unexpectedly placed upon them. For most men and women, infertility is a life-changing experience that often carries unexpected stressors and potential stigmatization (*Nichols and Pace-Nichols, 2000*).

As men and women find themselves in an unfamiliar situation, they find many ways to cope with infertility (*Lazarus and Folkman, 1984*). Four types of adjustment coping strategies used for infertility which are active-avoidance strategies (e.g. avoiding pregnant women or children), active-confronting strategies (e.g. showing feelings, ask others for advice), passive-avoidance strategies (e.g. hoping for a miracle) and meaning-based strategies (e.g. growing as a person in a good way; finding other goals in life) (for a detailed list of all questions for each coping strategy (*Verhaak and Hammer Burns, 2006*)).

Nurse are often the first health care provider to encounter couples with treatment period, Fertility clinic nurse often need to advise, counsel and support couples in their coping with infertility- and treatment-related stress. It is therefore important to gain insight into the mechanisms which influence the patients' coping response (*Schmidt, et al, 2004*).

Maternity nurse can play an integral role in the care of their patients undergoing ART treatment from both a medical and psychological perspective through counseling process through which individuals and couples are given the opportunity to explore their thoughts, emotions, reactions and beliefs with an impartial and empathetic professional who understands the issues involved. Good counseling helps couples cope better. It usually brings greater clarity, a broader perspective and some peace of mind. Decisions about what choices to make become more clear and are based on realism and self-knowledge. The process is strictly confidential (*Bartlam and McLeod, 2000*).

Aim:

To study the effect of counseling on couples adjustment to failed assisted reproductive technology.

Study Question:

Is counseling effective on couples' adjustment to failed assisted reproductive technology?

Justification of the Problem:

Infertility is a stressful life event and depressive symptoms are normal responses to the life crisis of the infertile couple. It has been estimated that 15% of the couples world wide experience infertility (*Williams and Zappert, 2006*). Assisted Reproductive Technology is a demanding and stressful situation; it's usually the final treatment for infertile couple and its failure mean to them that they will remain childless. This process could be followed by depression As a result, couples engage in a variety of coping strategies in an attempt to regain control over their lives and rebalance the disruptions they have experienced in their personal, marital and social relationships. Counselling and psychosocial support throughout the treatment plan especially for failed trial could have great benefit couple and ultimately greater success in achieving a pregnancy. So the researchers suggested the present study to study the effect of counselling on couples' adjustment to failed assisted reproductive technology as one of the main aspects for any infertility management plan.

2. Subject and Methods:

Study Design, Site, and Sampling:

An intervention study had been conducted at IVF centre of Ain Shams Maternity Hospital in Ain Shams University. It started in April 2010 and was completed in September 2010. Purposive sampling technique was used through taking all available couples undergoing failed IVF trial (110 couple: failed cases 59 and success cases 51) admitted in the study period and fulfilling the following inclusion criteria: documented infertility, undergoing IVF trial,

with different age, can read and write and had a telephone were included in the study. So working sample size was reached 143 couples as 33 couples were dropped out throughout the study due to inability to follow client and couples related cause.

Tools of the study:

Five types of tools were used for data collection and conduction of the study, these consisted of: Couples' Structured Interviewing Questionnaire, Coping Strategy Stress Scale, Ways of Coping (WOC) Questionnaire, They were used pre/post counselling program, follow up card and PLISSIT Model for counselling program used to develop an enhancement program for coping with failed assisted reproductive technology trials.

1. Couples' Structured Interviewing Questionnaire Sheet Regard Infertility & ART Trials :

It was designed by the researchers after reviewing of related literature. The tool which included 27 multiple choice questions, as well as open and close-ended questions and was divided into three parts:

Part I: It covered the general characteristics of the sample as personal identification and demographic data, e.g., age of couples, place of residence, and educational leveletc.

Part II: This part is concerned with present menstrual history & complaints.

Part III: This part was designated to assess times of ART trial, causes of infertility male or female, family pressure, economic status, times of couple marriage and if any of the couple have children ...etc.

2. Coping Strategy Stress Scale: (Schmidt, 1996)

Fertility related stress measured using 14 items concerned with the strains related to infertility produced in the personal, social and marital domain. It translated into Arabic to 27 items (i) The Personal stress subscale (13 items) tapped into the stress infertility had produced on the person's life and on mental and physical health. (ii) The Marital stress subscale (8 items) assessed the extent to which infertility had produced strain on the marital and sexual relationships (e.g. 'infertility has caused thoughts about divorce'). (iii) The Social stress subscale (6 items) assessed the stress infertility had produced on social relations with family, friends and workmates. The response key for these subscales personal, marital and social stress was a three -point scale. Response key from (1) not used (2) used somewhat and (3) used a great deal. Items from the different subscales were summed to produce total scores. Seven of these items were taken from The Fertility Problem Stress Inventory as this instrument covers all three domains. The remaining seven items

were developed from The Psychosocial Infertility Interview Study.

Scoring System:

Scoring items of the coping strategy stress scale was measured on three point's degrees, as following not used=1, used somewhat= 2, and used a great deal= 3 score for each question). (i) The Personal stress subscale (13 items), from 0-13 were considered not used, 13-26 were considered used somewhat and from 26-39 were considered used with great deal. (ii) The Marital stress subscale (8 items), from 0-8 were considered not used, 8-16 were considered used somewhat and from 16-24 were considered used with great deal. (iii) The Social stress subscale (6 items) from 0-6 were considered not used, 6-12 were considered used somewhat and from 12-18 were considered used with great Then scores of the items were summed up and the total divided by the number of the questions giving a mean score, then a mean score converted to a number without decimal, these score were converted into a percent score.

3. Ways of Coping (WOC) Questionnaire: (Folkman And Lazarus, 1988).

This part used to assess the ways of couples coping. These items covered a wide range of responses that the couple may have engaged in dealing with the fertility treatment problems. The items were categorized into four subscales based on their conceptual content: (i) active-avoidance strategies (e.g. avoiding pregnant women or children), (ii) active-confronting strategies (e.g. showing feelings, ask others for advice), (iii) passive-avoidance strategies (e.g. hoping for a miracle) and (iv) meaning-based coping (e.g. growing as a person in a good way; finding other goals in life).

Scoring System:

All scale items have a scale range from (1) not used, (2) used somewhat, (3) used a great deal. (i) active-avoidance strategies (4 items), from 0-4 were considered not used, 4-8 were considered used somewhat and from 8-12 were considered used with great deal, (ii) active-confronting strategies (7 items), from 0-7 were considered not used, 7-14 were considered used somewhat and from 14-21 were considered used with great deal, (iii) passive-avoidance strategies (5 items), from 0-5 were considered not used, 5-10 were considered used somewhat and from 10-15 were considered used with great deal, (iv) meaning-based coping (7 items), from 0-7 were considered not used, 7-14 were considered used somewhat and from 14-21 were considered used with great deal.

After checking of internal consistency reliability for all scale scores, each scale score is calculated using the average score of all belonging

items. Therefore the resulting scale scores should have the same scale ranging from 1 to 3. Two items in the marriage stress scales (items 14 and 18) are recoded to fit with the direction of other items. This procedure leads to creating 14 scales: three stress scales for husband, and another three for wife, and four coping scales for husband, and another four for wife.

4. Follow up Card:

It was designed to include the personal information of the couples such as name, address and telephone number of the couple for appropriate follow up of the couple during the ART treatment stages.

5. PLISSIT Model for Counselling program:

The P-LI-SS-IT model, developed in the mid-1970s, is a commonly used method of assessing and discussing sensitive and critical issues and concerns with patient in health care settings.

P – Permission

The researcher brought up the topic of infertility, thereby validating infertility as a legitimate health issue and gave the client permission to discuss childlessness concerns now and later in the program.

Let the couple know it is okay to have concerns about body image and infertility. Used open-ended statements such as: “Many people have concerns about their partner’s reactions to infertility. Is this an area of concern for you?” With this statement researcher normalizing concerns and gave permission for the patient to share concerns/fears.

L - Limited Information

The researcher addressed specific couples concerns and attempts to correct myths and misinformation about infertility and ART treatment.

- Talked openly and honestly about infertility causes and body image.
- Created a therapeutic relationship that is trusting, and open.
- Explored their thoughts and feelings about infertility and the IVF.
- Asked couple Questions such as:
 - √ How do you feel about your body now, and how do you think your feelings with infertility?
 - √ How do you normally cope with changes and losses?
 - √ Who is your partner?
 - √ Do you feel your partner is supportive?
 - √ Do you feel you have a strong relationship?
 - √ What are your specific concerns about living with childlessness?

- Clarified misconceptions about infertility and IVF treatment.
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S- Specific Suggestion

Treat the problem. Formulated ideas about causes and developed appropriate goals and treatment plans.

- Discussed “helpful hints” with couples.
- Shared information.

T – Therapy

The practitioner completed a full history of the client and provided specialized treatment.

There were times when couples require intensive therapy which can only be offered by a trained professional. The important thing to remember is to recognize when problems and issues extend beyond your knowledge base and to consult others with added expertise in the area.

Validity and reliability:

These tools were reviewed by jury of 5 expertises in the field of maternity and neonatal nursing & gynaecology to test its contents and face validity. Reliability was done by Cronbach's Alpha coefficient test which revealed as shown in the following table Cronbach's Alpha reliability coefficients ranged from moderate (0.619 for stress husband marriage scale) to high (0.873 for coping wife facing scale) indicating reasonable internal consistencies of all subscales.

Administrative Design and Ethical Considerations:

An official approval was obtained from the Maternal & Neonatal Health Nursing department counsels & the Scientific Research Ethical Committee that were approved by the Faculty of Nursing, Ain Shams University Counsel. Also a letter containing the title and aim was directed to the director of Ain Shams Maternity University Hospital then the approval for data collection was obtained. The aim of the study was explained to each couple before applying the tools to gain their confidence and trust. An oral consent was obtained from each couple to participate in the study, after ensuring that data collected will be treated confidentially. The study maneuvers do not entail any harmful effects on participating couple. Couples were informed that they have the right to withdraw from the study at any time without giving a reason. License Agreement for using scales was taken through electronic mail.

Operational Design:

The study to be completed has passed through different phases: The preparatory phase, then the pilot study, and lastly the fieldwork phase.

Preparatory phase:

Review of the current local and international related literature using books, articles and scientific magazines was done by the research team. This helped them to be acquainted with the problem, and

guided them in the process of tools' designing. The tools were then presented to experts for review and validation.

Reliability for the Study Subscale

Scale	No of Items	Cronbach's Alpha
• Stress Husband Personal.	13	0.762
• Stress Husband Marriage.	8	0.619
• Stress Husband Social.	6	0.651
• Stress Wife Personal.	13	.874
• Stress Wife Marriage.	8	.621
• Stress Wife Social.	6	.672
• Coping Husband Active Avoidance.	4	.867
• Coping Husband Facing.	7	.720
• Coping Husband Passive Avoidance.	5	.701
• Coping Husband Meaning.	7	.666
• Coping Wife Active Avoidance.	4	.708
• Coping Wife Facing.	7	.873
• Coping Wife Passive avoidance.	5	.637
• Coping Wife Meaning.	7	.681

Pilot study:

A pilot study was carried out on 11 infertile couples those were excluded in the main study sample. Its aim was to evaluate the simplicity, clarity, validity and reliability of the tools. It also helped in the estimation of the time needed to fill in the forms. According to the results of the pilot study, simple modifications were done as rephrasing two questions and removing one question.

Field Work:

The study consumed six months, started from April 2010 to September 2010, Permission was taken from the director of Ain Shams Maternity Hospital to gain the support and cooperation, The researcher visited the hospital 3 days per week, the researcher introduced herself to the couple and obtained their consent orally after explaining the purpose of the study to be recruited in the study. The researcher was fill interviewing questionnaire sheet to all couples undergoing ART treatment to assess their socio demographic data, reproductive history, causes of infertility and their family pressure. The interviewing process was done 3 days/ week starting from 9 to 2 pm by the researcher, the researcher was apply pre test to couples by using Coping Strategy Stress Scale to assess their psychosocial Communication and stress aspects of infertility and assess their coping way by using Ways of Coping (WOC) Questionnaire sheet. Then the researcher follow up couples to exclude the couple's with successful ART trial through the follow up card and only the cases with

failed trial were included in the program. The researcher performed PLISSIT counseling technique only for failed cases through multiple sessions to help them for coping with their infertility problems. After that post test was done to assess and evaluate their psychosocial stress aspects and the coping way of them after completion of the program. Confidentiality and anonymity of their responses was ensured, finally the researcher compared between of pre test and post test results of these couples to evaluate the effectiveness of the program.

Program Description:

The program was conducted to enhance couples to cope with failed assisted reproductive technology Trials. It was applied for 59 couples (couples with failed ART trial) found at IVF center of Ain Shams Maternity Hospital in Ain Shams University. Program was classified in to 4 groups of couples four times/ week from Saturday to Tuesday with alternative. The duration of the educational program was 8 weeks for each group. Program was classified into 8 sessions each session was planned to provide specific information about infertility, ART and methods used to help couples to cope; each session was conducted for 1 hour, these sessions were applied at lectures room of Ain Shams maternity hospital. Pre test was used to assess knowledge before implementation of the program, and post test was used for assessment of change happen after each session.

Statistical analysis:

Data entry was done using Epi-Info 6.04 computer software package, while statistical analysis was done using Statistical Packages for Social Science (SPSS) version 18.0. Quality control was done at the stages of coding and data entry. Data were presented using descriptive statistics in the form of frequencies and percentages for qualitative variables, and means and standard deviations for quantitative variables. Qualitative variables were compared using T test and Correlation (r) test. Cronbach's α (alpha) is used for test score reliability measure of sample. Statistical significance was considered at p-value <0.05 , highly significant difference obtained at $P < 0.01$ and non significant difference obtained at $P > 0.05$.

3. Results:

Table (1) showed general characteristics of the study sample. Couples included in the study ranged between 20-45 years, with a mean age of (30.36 ± 3.112) years for wives and (35.64 ± 3.852) years for husbands. 60.6 % of the studied sample lived in urban areas. Diploma graduate represented the higher percent (52.7 %) for wives and (50.9%) for husbands, followed by those had University education (25.5 %), (33.6%) while the Read and write were limited for both to (21.8 % & 15.5%). Majority of the couples were Employee (57.3 % & 54.5 %). Also Wives & husbands years of marriage ranging between (7 -10) year with a mean of (7.65 ± 2.522) years).

Table (2) revealed that 67.3% of female were the cause of infertility, and 94.5 of couples had a previous trials of ART. Regard numbers of couples' previous IVF trials, it was observed that 42.7% of these cases done ART for 2 times while 30 % done ART for 3 times and 17.3 % done it for 1 time and only 4.5 % done it more than 3 times.

Figure (1) illustrated the present result of couples' ART trial. It was observed that 53.6% of couples were had failed IVF trial and 46.4 % of couples were had succeed IVF trial

Table (3) revealed husbands' score regards coping & stress scale before and after counselling program. The expected range of all scales is from 1 to 3. All husbands stress difference between pre and post scores is significant in favour of post scores. With regard to coping, after counselling sessions Husbands scores were significantly lower than before counselling with regard to passive avoidance strategy. Correlations between husbands coping and stress scores across all study variables were also significant (Passive-avoidance) $t = 2.29$, ($P < 0.05$);

Personal distress $t = 4.03$, ($P < 0.05$); Marital distress $t = 4.99$, ($P < 0.05$); Social distress $t = 4.43$, ($P < 0.05$).

Table (4) showed wives' score regards coping & stress scale before and after counselling program. The expected range of all scales is from 1 to 3, the actual range of most subscales was less than that. All wives stress scale differences are significant but in favour of pre scores, this indicates that after counselling sessions wives have more stress. With regard to coping, after counselling session's wives scores were significantly higher than before with regard to meaning-based strategy. Correlations between wives coping and stress scores across all study variables were also significant (meaning-based) $t = 4.28$, ($P < 0.05$); Personal distress $t = 2.58$, ($P < 0.05$); Marital distress $t = 3.02$, ($P < 0.05$); Social distress $t = 2.85$, ($P < 0.05$). Although the wives active-confronting coping were not significant. However, their post program mean higher than pre program mean (2.51 (.44), 2.40(.43) respectively) $t = 2.58$, ($P > 0.05$).

Table (5) revealed relation between husbands' and wives stressors & coping score before counselling program. There was statistically significant relation between husband & wives have personal stressors & husbands meaning-based coping strategy before counselling sessions, $r = .221$, ($P < 0.05$), $r = .202$, ($P < 0.05$) respectively. Also there is significant relation between husbands social stressors & Active confronting coping strategy $r = .195$, ($P < 0.05$).

Table (6) showed relation between husband's & wives stressors & coping score after counselling program. There were no statistically significant relations between all husbands & wives stressors and husbands coping strategy scores after counselling sessions.

Table (7) proved relationship between IVF outcome and total stressor level & coping for husbands. Their scores regarding stressors and coping scales were approximately nearly between negative and positive sample outcome. There were no statistically significant relations between IVF outcome and husband stress and coping levels.

Table (8) illustrated relationship between IVF outcome and total stressor level & coping for wives. It was observed that wives who had high stressors score mean (2.08, 1.85, and 1.98 respectively) had negative outcome. Although wives with positive outcome were had higher coping score mean regarding (Passive-avoidance & Meaning-base) than negative outcome (2.49, 2.47 respectively). There were no statistically significant relations between IVF outcome and stress and coping levels.

Table (1): General Characteristics of the Study Sample

General Characteristics	(n =110)	
	Wives	Husbands
	%	%
Age: (in years)		
<30	29.1	10.0
30-34	57.3	20.9
> 35	13.6	69.1
Mean age ± SD	30.36± 3.112	35.64±3.852
Residence:		
Urban	60.6	60.6
Rural	39.4	39.4
Education:		
Read and write.	21.8	15.5
Diploma graduate.	52.7	50.9
University education.	25.5	33.6
Occupation		
Worker	5.5	29.1
Farmer	-	4.5
Employee	57.3	54.5
Another job	-	11.8
House wife	37.3	-
Family Income		
Not Enough	61.8	61.8
Enough	24.5	24.5
Save money	13.6	13.6
Years of Marriage		
< 6	38.2	38.2
7-10	49.1	49.1
>10	12.7	12.7
Previous marriage		
Yes	14.5	23.6
No	85.5	76.4
Presence of children from previous marriage		
Yes	3.6	15.5
No	96.4	84.5

Table (2): Previous ART trial of the study sample:

Items	n=110	
	No	%
Causes of Infertility		
Males	36	32.7
Females	74	67.3
Previous trials of ART		
Yes	104	94.5
No	6	5.5
Type of ART Method performed		
ICSI.	23	20.9
IUI.	17	15.5
IVF.	64	58.2
Numbers of Couples' Previous IVF Trials		
1	19	17.3
2	47	42.7
3	33	30.0
More than 3	5	4.5

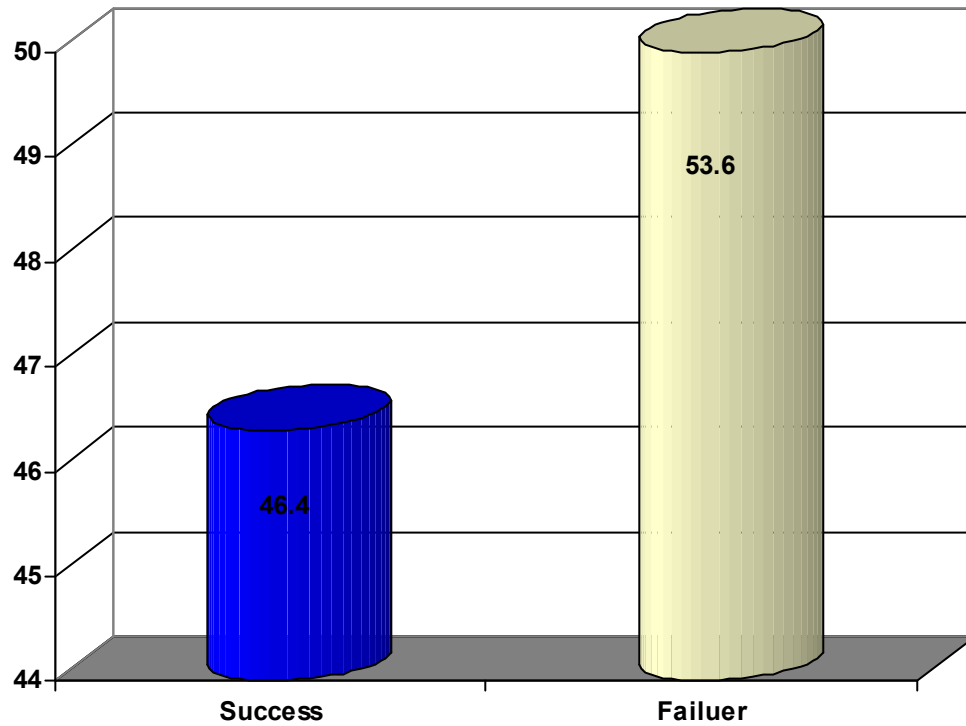


Figure (1): Present result of Couples' ART trial

Table (3): Husbands' Score Regards Coping & Stress Scale before and after Counselling Program:

Variable	Pre counselling program n= 59	Post counselling program n= 59	T. Test	P Value
	Mean (SD)	Mean (SD)		
Active-avoidance (4 items)	2.22(.54)	2.15(.53)	.76	.448
Active-confronting (7 items)	2.41(.39)	2.46(.28)	-.74	.465
Passive-avoidance(5 items)	2.33(.37)	2.18(.36)	2.29	.025*
Meaning-based(7 items)	2.63(.23)	2.57(.19)	1.57	.121
Personal distress (13 items)	2.28(.31)	1.98(.45)	4.03	.000**
Marital distress (8 items)	1.91(.23)	1.64(.32)	4.99	.000**
Social distress (6 items)	2.12(.30)	1.89(.33)	4.43	.000**

* Statistically significant difference at P < 0. 05

** Highly significant difference obtained at P < 0.01

Table (4): Wives' Score Regards Coping & Stress Scale before and after Counselling Program:

Variable	Pre counselling program n= 59	Post counselling program n= 59	T. Test	P Value
	Mean (SD)	Mean (SD)		
Active-avoidance (4 items)	2.13(.44)	2.00(.56)	1.64	.106
Active-confronting (7 items)	2.40(.43)	2.51(.44)	-1.29	.201
Passive-avoidance(5 items)	2.44(.38)	2.38(.40)	.81	.422
Meaning-based(7 items)	2.41(.35)	2.64(.21)	-4.28	.000**
Personal distress (13 items)	2.04(.46)	2.23(.31)	-2.58	.012*
Marital distress (8 items)	1.68(.31)	1.82(.21)	-3.02	.002*
Social distress (6 items)	1.92(.39)	2.10(.24)	-2.85	.006*

* Statistically significant difference at $P < 0.05$

** Highly significant difference obtained at $P < 0.01$

Table (5): Relation between Husband's & Wives Stressors & Coping Score before counselling program:

Coping Stressors	n =110				Test of Sig
	Active Avoiding	Active confronting	passive Avoiding	Meaning	
Hus_ personal	.106	.089	-.020-	.221*	r
	.272	.358	.834	.021*	P value
Hus_ marriage	.050	-.016-	-.059-	.021	r
	.607	.869	.538	.827	P value
Hus_ Social	.070	.195*	.057	.185	r
	.469	.041	.557	.052	P value
Wife_ personal	.117	.098	-.015-	.202*	r
	.224	.308	.877	.034*	P value
Wife_ marriage	-.023-	.024	-.049-	-.119-	r
	.810	.805	.614	.216	P value
Wife_ Social	.153	.099	.066	.072	r
	.111	.306	.493	.455	P value

* Statistically significant difference at $P < 0.05$

Table (6): Relation between Husband's & Wives Stressors & Coping Score after Counselling Program:

Coping Stressors	n =59				
	Active Avoiding	Active confronting	passive Avoiding	Meaning	Test of Sig
Hus_ personal	.107	.071	.134	.155	r
	.419	.591	.313	.242	P value
Hus_ marriage	-.099-	-.087-	-.117-	-.171-	r
	.455	.510	.379	.196	P value
Hus_ Social	.081	.036	.043	.157	r
	.541	.785	.746	.236	P value
Wife_ personal	.088	-.076-	.060	.160	r
	.506	.567	.652	.227	P value
Wife_ marriage	.217	.187	-.112-	.116	r
	.099	.157	.397	.380	P value
Wife_ Social	-.056-	.046	.000	.093	r
	.671	.728	.998	.482	P value

* Statistically significant difference at $P < 0.05$

Table (7): Relationship between IVF Outcome and Total Stressor Level & Coping for Husbands

Total stressor Level & coping	IVF Outcome				T	P- value
	Negative (n=59)		Positive (n=51)			
	Mean	SD	Mean	SD		
Personal Stress	2.19	.434	2.12	.382	.875	.383
Marital stress	1.97	.183	1.98	.140	.455	.650
Social stress	2.10	.357	2.22	.415	1.548	.125
Active-avoidance	2.34	.605	2.35	.627	.119	.906
Active-confronting	2.46	.536	2.37	.528	.836	.405
Passive-avoidance	2.29	.493	2.39	.532	1.064	.290
Meaning-base	2.69	.464	2.63	.488	.742	.460

Table (8): Relationship between IVF outcome and total stressor level & coping for Wives

Total stressor Level & coping	IVF Outcome				T	P- value
	Negative (n=59)		Positive (n=51)			
	Mean	SD	Mean	SD		
Personal Stress	2.08	.501	1.96	.398	1.421	.158
Marital stress	1.85	.363	1.84	.464	.055	.956
Social stress	1.98	.473	1.94	.420	.487	.627
Active-avoidance	2.17	.461	2.12	.431	.606	.546
Active-confronting	2.42	.532	2.31	.469	1.143	.256
Passive-avoidance	2.47	.504	2.49	.505	.162	.872
Meaning-base	2.42	.498	2.47	.504	.489	.626

4. Discussion:

Infertility is an unplanned and unexpected stressors, couples typically lack the knowledge and skill set to adequately manage infertility stress. As a result, couples engage in a variety of coping strategies in an attempt to regain control over their lives and rebalance the disruptions they have experienced in their personal, marital and social relationships *Austenfeld & Stanton, (2004)*. The nurse play an important role by continually expanding and changing their performance to meet the demands of couples undergoing IVF. The main roles for the infertility nurse are giving knowledge about infertility and its treatment, counselling support system, and enhancing positive coping mechanism; All of these to reduce stressors level for the couple's undergoing IVF, and promote positive result and coping strategy with failed cases *Lee et al, (2000)*. In support to the previous concepts the research team designed the present study which was aiming to study the effect of counselling on couples' adjustment to failed assisted reproductive technology

As regarding sample characteristics, the present study revealed that although, fertility decreased by increasing age the wives in different ages were seeking IVF treatment. 57.3% of wives were between 30-34 years, 69.1% of husbands were > 35 year. Men were significantly older than women, with a mean age of 35.64±3.852 versus 30.36± 3.112 years, respectively. This finding are congruent with those reported by *Peterson et al, (2008)* whom stated that men were significantly older than women, with a mean age of 34.4 versus 32.0 years, respectively ($t = 17.6$, $P = 0.001$). This finding also was approved by *Faddy et al, (1992)* whom stated that naturally, there is an age-related decline in fecundity, the decrease usually starting at the age of 32 with a dramatic fall after the age of 37.0 Spelt differently, the natural monthly fecundity rate which is about 25% between 20 and 30 years of age decreases to below 10% above the age of 35.

As, regard wives and husbands education, the current study revealed that 52.7%, 50.9% respectively were diploma graduate. As regarding, relation between educational level, stressors and husbands coping mechanism, the current study revealed that there were significant relation observed. As well as with increasing educational level, there was decrease of infertility stressors and increase passive – avoidance coping mechanism (they hoped for things such as a miracle or felt that the only thing they could do was wait. Plus that with high educational level, their awareness and understanding to ART increase). The result of present study was in agreement with *Eid, (2006)*, who stated that,

educated couples perceived less stressor than uneducated couples and couples stressors decrease as the level of education increases. This gives high coping mechanism for highly educated levels. *On other side, Pottinger et al, (2006)*, contradicted this result and reported that socio-demographic factors are not related to the infertility stress.

Regarding the residence, the current study revealed that 60.6% of couples were urban residence, this result explain ability of couples to cope with failed trials. The previous finding was in agreement with *Khatab et al, (1999)*, who stated that couples in urban area are able to cope than couples in rural area.

As regard husband stressors and coping scores, the current study revealed that after counselling sessions Husbands scores were significantly lower than before counselling with regard to passive avoidance strategy. This may be explained that husband passive avoidance coping (e.g. relying on a miracle and feeling the only thing they could do about infertility was wait) was linked with increased personal, marital and social distress for themselves, and increased personal and marital distress for their wives. And it was a significant predictor of high fertility problem stress in the personal, social and marital domain among women and men by avoided infertility stress in that they hoped for things such as a miracle or felt that the only thing they could do was wait.

Although, their mean score for active confronting coping were higher than before but it wasn't reach to significantly difference, this means that majority of husbands able to use active-confronting coping, and this unexpected result, and this indicates that couples who used active-confronting coping moved toward the infertility stress as opposed to away from it. Men and women in these couples reported expressing their feelings about the infertility, asking others for advice and accepting sympathy and understanding from others Similarly, the finding revealed that husbands demonstrated significant between pre and post personal, marital and social stressors scores in favor of post scores. Correlations between husbands coping and stress scores across all study variables were also significant (Passive-avoidance) $t = 2.29$, ($P < 0.05$); Personal distress $t = 4.03$, ($P < 0.05$); Marital distress $t = 4.99$, ($P < 0.05$); Social distress $t = 4.43$, ($P < 0.05$).

This result contrasts with *Berghuis and Stanton, (2002)*, as they stated that there were significant partner effects for personal, marital or social distress and passive-avoidance coping strategy. *Schmidt et al, (2003)*, contradicted this view mentioning that: High use of active-avoidance coping was a significant predictor of high fertility problem

stress in the personal domain and the social domain among both women and men (OR for total stress: women, 2.42, 95% CI 1.41–4.14; men, 2.41, 95% CI 1.29–4.53). On the other side the current study revealed that all wives stress scale (personal, marital, social) differences are significant but in favor of pre scores, With regard to coping, after counseling session's wives scores were significantly higher than before with regard to meaning-based strategy. All correlations were positive, indicating that High use of meaning –based coping was a significant predictor of high fertility problem stress in the personal, marital and social domain among women.

Overall, women in the study reported significantly higher amounts of personal, marital and social distress as compared to men. this might be interpreted as wives take more responsibility for giving birth, even if the problem origin was the male, as for females, with failed IVF trials they become more stressors and hopeless. This finding was approved by *Newton et al, (1999)* in his previous studies when found that women consistently report higher amounts of infertility stress than men. *Morrow et al, (1995)* approved this result, whom reported that This is likely due to the fact that the experience of infertility is so closely linked to the female identity, and because the female's body is the main focus of fertility treatment.

Daniluk and Tench, (2007) contradicted this result whom stated that both male and female personal distress levels decreased at similar rates and adaptation of men and women to failed fertility treatments was similar, and that couples report less distress over time, potentially because they have more psychological space to respond to the life transition. According to *Greil, (1997)*, Women also reported significantly increased use of coping using each of the four coping strategies as compared to men. This increase is likely linked with the higher levels of stress experienced by women: the more stressful the infertility is perceived, the more likely one is to engage in coping as a way to reduce or manage the stress. The increased stress and coping reports for women, when compared to men, are consistent with a wide body of literature regarding gender differences in infertility stress and coping.

Similarly, *Kenny et al, (2006)*, supported this finding when reported that women demonstrated both higher levels of usage of all three types of stress when compared to men with $t = (221.59, 22.34, \text{ and } 29.83)$. According to *Thomsen, (2005)*, Women reported a higher level of stress in all three domains at T2 (A follow-up questionnaire was sent 12 months later) compared with T1 (before their first treatment attempt at the clinic). Men reported a lower level of stress in the personal and marital domain at T2

compared with T1 and a higher level of stress in the social domain. *Schmidt et al, (2005)*, approved these finding whom reported high use of meaning-based coping was a significant predictor of low fertility problem stress in the personal domain, the marital domain, and for total fertility problem stress (OR 0.44, 95% CI 0.26–0.75) among women.

Jordan and Revenson, (1999), stated that, the impact of meaning-based coping over time was also noteworthy. When a woman used this strategy, it had a beneficial effect on her personal and marital distress, and also on her partner's marital distress. This is a significant finding because it is rare to find coping strategies that are significantly related to decreased distress.

Regarding coping scores finding, it was contradicted by *Peterson, (2006)*, as they found the women reported significantly increased use of coping using each of the four coping strategies as compared to men. This increase is likely with the higher levels of stress experienced by women: the more stressful the infertility is perceived, the more likely one is to engage in coping as a way to reduce or manage the stress. The increased stress and coping reports for women, when compared to men, are consistent with a wide body of literature regarding gender differences in infertility stress and coping. *Peterson, (2008)*, reported as regarding to correlations between couples' coping and stress scores across all study variables were also significant (active-avoidance $r = 0.35$, $P, 0.001$; active-confronting $r = 0.34$, $P, 0.001$; passive-avoidance $r = 0.38$, $P, 0.001$; meaning-based $r = 0.36$, $P, 0.001$; personal distress $r = 0.48$, $P, 0.001$, marital distress $r = 0.71$, $P, 0.001$, social distress $r = 0.39$, $P, 0.001$).

In conclusion, the study highlights how couples with failed ART trial cope with infertility, and how coping is related to infertility stress. The study found that wives demonstrated more emotional& stressful disturbance than husbands after counseling sessions, while they both frequently use a combination of strategies to cope, study showed different coping behaviors to deal with their infertility.

5. Conclusion:

Finally, the present study proved that counseling effective on couples' adjustment to failed assisted reproductive technology. Wives demonstrated more emotional& stressful disturbance than husbands after failed ART trials, while they both frequently use a combination of strategies for adjustment, study showed different coping behaviors to deal with their infertility (meaning-based coping & passive avoidance coping strategy).

Recommendations:

In the light of the study findings, the following recommendations are suggested:

- Investigate factors influencing the gender differences in reactions to infertility with other stressful health situations.
- Establishment of educational programs to enlighten infertile couples about treatment options and answer their questions and different coping strategies with Failed Assisted Reproductive Technology Trials
- Train nurses working in fertility clinics to enable them to provide proper counselling services for the infertile couples.
- Further studies are still needed to determine the effect of communication and different coping strategies on stress level for infertile couple

Limitation of the Study:

Lack of couple's motivation to cooperate with the researchers during the study and low self esteem of the couples experience failed trials.

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