Couples' Reaction to Failed Assisted Reproductive Technology

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Abstract: This is a descriptive study **aimed** to assessing the couples' reaction to failed Assisted Reproductive Technology .It was **conducted** at IVF center of Ain Shams Maternity University Hospital. It started in April 2010 and was completed in September 2010 after obtaining faculty ethical committee approval. The **sample** was consisted of (59 couples) undergoing failed ART trial. **Tools** used for data collection consisted of couples' structured interviewing questionnaire sheet regard infertility& ART trials and couples' reactions to failed assisted reproductive technology sheet. **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. Analysis of wives stressor revealed that high stressor aroused from social distress 41.5 % mean while husbands stressor revealed that high stressor aroused from personal distress 54.1 %. As regard wives reactions regard failed ART trials , it was observed that powerlessness, frustration and sense of failure are major negative reactions which represented 83.2%, 88.1% and 66.2 % respectively mean while husbands reactions were frustration ,sense of failure and anxiety & depression are major negative reactions which represented 74.2%, 51.7 % and 49.7 % respectively. Strong positive correlation was proved between wives & husbands reactions and stressor regard failed ART trials that proved more stressor increase negative reactions especially for wives than their husbands. **The study concluded** that wives demonstrated more emotional reactions & stressful disturbance than husbands after failed ART trials. The study **recommended** eestablish of educational programs to enlighten infertile couples about treatment options and answer their questions and different coping strategies with failed assisted reproductive technology trials after investigating factors influencing the gender differences in reactions to infertility with other stressful health situations.
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1. Introduction

Infertility classically defined as the inability to conceive after a year or more of trying and resulting in involuntary childlessness, ***(Cocuzza et al, 2008)***. It has been indicated by the World Health Organization 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).***

A couple is diagnosed with infertility, commonly experience a variety of stressors. These stressors include, but are not limited to, disruptions in a couple's personal life and relationships with others, changes in the quality of a couple's emotional and sexual relationship, and alterations in a couple's relationships with co-workers, family and friends. Further, infertility challenges the infertile couples' life expectations ***(Peterson et al., 2007)***.

Assisted Reproductive Technology (ART) is a general term referring to methods used to achieve pregnancy by artificial or partially artificial means. It is used primarily in infertility treatments. Some forms of ART are also used in fertile couples for genetic reasons ***(Zhang et al, 2008).***

Assisted Reproductive Technologies involve a significant physical, financial, and emotional commitment on the part of the couple. Psychological stress is common; and some couples describe the experience as an emotional roller coaster. The treatments are involved and costly. Patients have high expectations, yet failure is common in any given cycle. Couples have many reactions; they may feel frustrated, angry, isolated, and resentful. At times, frustration can lead to depression and feelings of low self-esteem, especially in the immediate period following a failed ART attempt. Couples are encouraged to consider psychological counseling as an additional means of support and stress management ***(Klerk et al, 2005).***

Typical reactions include shock, grief, depression, anger, and frustration, as well as loss of self-esteem, self-confidence, and a sense of control over one's destiny, couples dealing with infertility may avoid social interaction with friends who are pregnant and families who have children. They may struggle with anxiety-related sexual dysfunction and other marital conflicts ***(Burns, 2007)***.

Individuals experiencing failed trial of infertility treatment often move through the grieving process. Men and women do this in different ways, which can make decision-making challenging. Undoubtedly, Nurses must be sensitive to the fact that adoption may not be an acceptable choice for some couples and the process to adopt also is not easy and play a pivotal role in helping address the unique needs of these couple. Fertility clinic nurse often need to advise 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).***

Nurse can play an integral role in the care of their patients undergoing ART treatment from both a medical and psychological perspective. The ART journey is a physically and emotionally demanding one. As a nurse, it is essential to have an understanding of the difficulties couples encounter as they go through this process. In our society, we often hear the success stories of reproductive medicine, but we do not hear about the associated pain and emotional distress. Even if you do not directly work with patients who have infertility problems, you may encounter them in your practice. It is critical to have a basic understanding of the challenges these couples face. This increases the opportunity for nurses to encounter these patients, making it crucial for nurses to be prepared to address their physical and emotional needs ***(Lutter, 2008).***

Aim: To assess the couples' reaction to failed assisted reproductive technology.

Research Hypotheses: Couples experience different reactions 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. 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 couples' reaction to failed assisted reproductive technology as one of the main aspects for any management plan in the Egyptian community.

2. Subject and Methods:

Study Design, Site, and Sampling:

A descriptive study had been conducted at IVF center 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 ART trial (59 couples) admitted in the study period.

Tools of the Study:

Two types of tools were used for data collection. These consisted of Couples' Structured Interviewing Questionnaire sheet Regard Infertility& ART trials and Couples' Reactions to Failed Assisted Reproductive Technology Sheet. They were used once.

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 level ……etc.

Part II: This part is concerned with present 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. Couples' Reactions to Failed Assisted Reproductive Technology Sheet:

It was designed by the researchers after reviewing of related literature. The tool used by each couple to record the stressors and different reactions regard failed assisted reproductive technology.

Validity and Reliability:

These tools were reviewed by jury of 5 expertises in the field of maternity and neonatal nursing & gynecology to test its contents and face

validly. Reliability was done by Cronbach's Alpha coefficient test which revealed r = 79.7.

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 couples. Couples were informed that they have the right to withdraw from the study at any time without giving a reason.

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.

Pilot Study:

A pilot study was carried out on 6 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 started in April 2010 and was completed in September 2010.Data were collected 3 day/ week starting from 10 am to 2 pm. All available couples undergoing failed ART trial admitted in the study period were included. Couples consented to be included in the study reached (59), the interviewing questionnaire sheet was used after explaining it individually in time range 20-25 min, as well as the couples were asked to fill different couples' reactions to failed assisted reproductive technology sheet. The research team asked women to keep the researchers in touch as needed.

Statistical Analysis:

Data entry and 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 chi-square test and Correlation (r) test. Statistical significance was considered at p-value <0.05, highly significant difference obtained at P < 0.0l and non significant difference obtained at P > 0.05.

3. Results:

Table (1) showed 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. 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.

Figure (1) indicated the numbers of couples' previous ART 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.

Tables (3) illustrated different couples' reactions and stressor regard failed ART trials. Analysis of wives stressor revealed that high stressor aroused from social distress then marital and personal respectively 41.5 %, 35.2 % and 23.3 % mean while husbands stressor revealed that high stressor aroused from personal distress then marital and social respectively 54.1 %, 24.2 % and 21.7%. as regard wives reactions regard failed ART trials , it was observed that powerlessness, frustration and sense of failure were major negative reactions which represented 83.2%, 88.1% and 66.2 % respectively mean while husbands reactions were frustration ,sense of failure and anxiety & depression were major negative reactions which represented 74.2%, 51.7 % and 49.7 % respectively

Tables (4 & 5) proved strong positive correlation between wives & husbands reactions and stressor regard failed ART trials that proved more

stressor increase negative reactions especially for wives than their husbands.

Table (1): General Characteristics of the Study Sample

General Characteristics	(n =59)	
	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 ±3.85 2
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	-
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=59	
	No	%
Causes of Infertility		
Males	19	32.7
Females	40	67.3
Previous trials of ART		
Yes	55	94.5
No	4	5.5
Type of ART Method performed		
ICSI.	12	20.9
IUI.	9	15.5
ART.	38	58.2

Table (3): Different Couples Reactions and Stressor Regard Failed ART Trials of the Study Sample

Items	(n =59)	
	Wives	Husbands
	%	%
Stressor:		
Personal distress	23.3	54.1
Marital distress	35.2	24.2
Social distress	41.5	21.7
$X^2 = 4.420$		** P = 0.000
Reactions:		
Anger	40.2	33.1
Powerlessness	83.2	43
Sense of failure	66.2	51.7
Frustration	88.1	74.2
Anxiety, sad & Depression	53.6	49.7
$X^2 = 3.267$		* P = 0.041

* Statistically significant difference at P < 0. 05
** Highly significant difference obtained at P < 0.0l

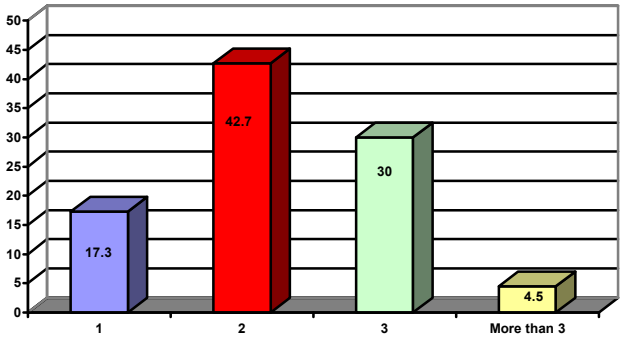

Figure (1): Numbers of Couples' Previous ART Trials

Table (4) Correlation between Wives Reactions and Stressor Regard Failed ART Trials of the Study Sample

Reactions	Wives Stressors n = 59 (100%)		
	Personal distress	Marital distress	Social distress
Anger	33.3	16.9	49.8
Powerlessness	30.1	44.2	25.7
Sense of failure	10.3	22.7	67
Frustration	18.2	11.2	70.6
Anxiety & Depression	8.1	5	86.9
R = 0.892	Strong Positive Correlation	**P = 0. 001.	

Table (5) Correlation between Husbands Reactions and Stressor Regard Failed ART Trials of the Study Sample

Reactions	Husbands Stressors n = 59 (100%)		
	Personal distress	Marital distress	Social distress
Anger	23.2	21.1	55.7
Powerlessness	40.1	40	19.9
Sense of failure	5.4	19.6	75
Frustration	23.1	11.3	65.6
Anxiety & Depression	8.2	8	83.8
R = 0.771	Strong Positive Correlation	**P = 0. 001.	

4. Discussion:

Infertility or involuntary childlessness is a serious disease. It rates being about 15% globally and above 30% in developing countries, it considered a significant source of emotional trauma for several couples ***(Watkins and Baldo, 2004).***

Infertility is a low-control stressor; that is, a stressful situation in which the infertile couple can do little or nothing to influence the nature or the outcome of their situation. As infertility is an unplanned and unexpected stressor, 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).***

Couple diagnosed with infertility, they commonly experience a variety of stressors. These stressors include, but are not limited to, disruptions in a couple's personal life and relationships with others, changes in the quality of a couple's emotional and sexual relationship, and alterations in a couple's relationships with co-workers, family and friends. Further, infertility challenges the infertile couples' life expectations ***(Peterson et al, 2007)***.In support to the previous concepts the research team designed the present study which was aiming to assess the couples' reaction 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 ART 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 ¼ 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. 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. The current study revealed that increasing educational level, there was decrease of infertility stressors. 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**.**

The present study revealed that 49.1% couple of all sample were seeking ART treatment, 57.3 % were employee which is correlated with increase couples stress after failed trials of ART. This finding was in agreement with ***Van Peperstraten et al, (2008***) whom stated that increase costs associated with delayed in vitro fertilization practice and couples who discontinued treatment. Also, ***Jain et al, (2002)*** supported this result and stated that increase cost and family income decline are the pros and cons of ART outcome and the costs of the potentially necessary additional cycles are important barriers for use of ART.

The current study revealed that 67.3% of females were the cause of infertility. ***Peterson et al, (2006),*** supported these finding when reported that eighty percent of infertility diagnoses were attributable to women (e.g. tubal factors and endometriosis), 12% of diagnoses were idiopathic (e.g. unexplained) and 8% were attributable to men (e.g. low sperm count).

The current study illustrated that 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 ART 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, which 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.

As regards the main emotional reactions in the present study were anxiety, depression, anger, feeling devastated, powerlessness, and sense of failure and frustration among the men. All the women reactions were anxious, sad, anger, powerlessness, sense of failure, frustration & depression or worried about their infertility diagnosis. Also the study confirmed gender differences in the emotional reaction to infertility stating that women were more distressed by infertility whether they or their spouse caused the reproductive impairment this could be a result of social pressure from their relatives, in-laws, friends and even colleagues at work.

This finding was assured *by* ***Lee et al,(2001***) who noted that the Most cultural orientations which teach that childbirth is a female's innate function, also contributes to this added pressure or stress in the infertile people. In some cultures, marriage is not considered successful until the couple bears a child and childbirth is a guarantee of the stability and perhaps insurance of the marriage.

The present results confirmed strong positive correlation between wives & husbands reactions and stressor regard failed ART trials that proved more stressor increase negative reactions especially for wives than their husbands.

These results agree with researchers ***Omu and Omu, (2010)*** looked at the results of 100 studies conducted on Infertility and psychological distress: a critical review of the literature. He was found the reactions of the women before they became pregnant included anxiety, depression, anger, feeling devastated, powerlessness, sense of failure and different degrees of frustration including overwhelming frustration were more with social and marital stressor than their husbands.

5. Conclusion:

Finally, the present study concluded that wives demonstrated more emotional reactions & stressful disturbance than husbands after failed ART trials.

The main emotional reactions in the present study were anxiety, depression, anger, feeling devastated, powerlessness, and sense of failure and frustration among the men. All the women reactions were anxious, sad, anger, powerlessness, sense of failure, frustration & depression or worried about their infertility diagnosis. Also the study confirmed gender differences in the emotional reaction to infertility stating that women were more distressed by infertility whether they or their spouse caused the reproductive impairment this could be a result of social pressure from their relatives, in-laws, friends and even colleagues at work.

6. 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 using different coping strategies with Failed Assisted Reproductive Technology Trials on couple's adjustment.

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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