



# Awareness and Knowledge about Assisted Reproductive Technology among Women with Infertility in Kashmir

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## ABSTRACT

*Infertility is a growing health problem in India. The population affected by the experience of infertility has increased dramatically in recent decades and is expected to increase. It is considered as a tragedy in most Indian setting. This is due to premium placed on fertility as a result of roles that children fulfill in the family and the society. Infertility rate in Kashmir is 15% which is an alarming level. Despite this growing need, the contemporary understanding of infertility is too narrow. Modern day infertility needs to be interpreted within a broader historical and bio psychosocial perspective. Etiological factors of infertility are mostly related to organ pathology, endocrine disorders, low ovarian reserve (due to late marriage) and they are mainly associated with poor treatment outcome to conventional non assisted conception technique, unawareness of the problem and relevant issues and the treatment protocols that may influence the effectiveness of these methods. There is a widespread misconception and unawareness regarding the ART, particularly among women in Kashmir. In this context, the present paper aims to evaluate the level of awareness and perception of Assisted conception treatment among women with Infertility in Kashmir.*

**Key Words:** *Infertility Assisted Reproductive Technology, Awareness, Knowledge.*

## INTRODUCTION

Infertility is 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 (Nouriani, 2010). World Health Organization defined primary infertility as the percentage of never pregnant women exposed to the risk of pregnancy for the last two years without conceiving and secondary infertility as one where a couple previously conceived, but was unable to conceive subsequently despite cohabitation and exposure to pregnancy for a period of two or more years. An extended definition of infertility includes women who can conceive but cannot carry a pregnancy to the full term; that is women who suffer repeated or habitual abortions (W.H.O,1991). Infertility is a global health issue, affecting approximately 8-12 percent of couples worldwide during their reproductive age there by affecting 50 to 80 million people [Bharadwaj, (2000); Bovine, Bunting, Collins, and Negron (2007); Van Balen and Gerrits



(2001)]. Infertility is not merely a health problem it is also a matter of social injustice and inequality (Kumar, 2010). India accounts for nearly to 5 to 10 million of infertile couples and this number is constantly rising at the rate of 5 percent every two years (Nagaraj, 2000). WHO epidemiological studies (2000) quoted the prevalence rates for infertility in India as 3% in primary and 8% in Secondary infertility. The study further explained that, globally poor countries have higher rates of infertility than wealthy countries. The primary infertility in overall infertility rate in Kashmir is 15 percent. With statistics not updated for a long time, gynecologists believe that the rate of primary infertility confronting a large number of women in what is called the 'reproductive ages' has dramatically increased (Zargar, 2007). Medical experts has found increased age of marriage, changing lifestyle, conflict, deficiency of vital nutrition and other reasons which have spiked the rate of infertility among women in Kashmir during the last decade ( Greater Kashmir, 19 January 2016). Another study conducted in the hospital settings pertaining to prevalence and causes of infertility in ethnic population of Jammu and Kashmir Indicate that Jammu region has highest prevalence of infertility rate followed by Kashmir region, where as Ladakh region has the lowest prevalence rate. Majority (45.5%) of the infertile females were diagnosed by reproductive organ pathology, followed by endocrine disorders (31%), unexpected causes (22%), menstrual disorders (1.25%) and other causes (0.25%) in the regions of Jammu and Kashmir. The study also shows that Jammu region shows highest percentage (41.7%) of endocrine disorders whereas Kashmir shows highest percentage (52.0%) of reproductive organ pathology and Ladakh region shows (40.0%) of unexpected causes ( Amin, Bhat & Ali, 2015). In Kashmir division main cause of infertility is associated with reproductive organ pathology which would need ART (Artificial Reproductive Technology) treatment.

Assisted reproductive technology (ART) is a general term referring to methods used to achieve pregnancy by artificial or partially artificial means. It is reproductive technology used primarily in infertility treatments ( Desai, Shirode, Mittal, & Kadam, 2011). Some other forms of ART are also used in fertile couples for genetic reasons and in couples who are exposed to diseases like AIDS, to reduce the risk of infection when a pregnancy is desired. Examples of ART include in vitro fertilization, intra cytoplasmic sperm injection (ICSI), cryopreservation, and intrauterine insemination (IUI). There is yet no strict definition of the term. Usage of the ART mainly belongs in the field of reproductive endocrinology and infertility (Muriel et al., 2006).Procedures are mainly fertility medication, as well as ART techniques which uses more substantial and forceful interventions, of which in vitro fertilization (IVF) and advanced method of IVF such as, Intra cytoplasm sperm injection (ICSI), Gamete intra fallopian transfer (GIFT), Zygote intra fallopian transfer (ZIFT) are the most prevalent (Desai et al., 2011).

## II.REVIEW OF LITERATURE

The available data shows that 10 to 15 percent of couples have infertility problems and more than 90% of infertility cases could be treated (Dafei & Dehglani, 2002). Knowledge about reproductive health could decrease infertility diseases. Concerning infertility, awareness about sexual problems may decrease diseases and reduce



infertility, especially in developing countries where infections are the main cause of infertility. Reproductive problems may affect the reproductive process (Bunting & Boivin., 2008). Unfortunately, people do not know about infertility. In an international study among 17,500 individuals from ten countries in Europe, Middle-East, and South Africa, it was found that most of the people had little knowledge about fertility and reproductive process (Abolfotouh, Alabdrabalnabi, Albacker, Al-Jughaiman & Hassan., 2013).

Assisted Reproductive technology has been reported to relieve more than 50 percent of infertility cases (Bunting & Boivin, 2008). However, to set up this technology in the developing world is capital intensive and to access the treatment is reciprocally expensive. These pose barriers to the spread of ART treatment in the developing world where this technology is mostly needed. On the contrary, in the developed countries, ART treatment has made substantial contribution to the alleviation of infertility burden. In Latin America and Egypt, the proportion of the population that have access to ART treatment is less than 2 percent, while rates as high as 37 percent have access to ART treatment in Denmark (Bunting, & Boivin., 2008). Determining the level of awareness and perception on ART treatment practices among infertile women would be useful in sensitizing and planning public enlightenment programmes on advanced infertility treatment. We hypothesize that the constraints of low spread of ART treatment option in the developing countries may have a negative impact on knowledge and perception on ART treatment.

Infertility treatment has psychological, social, and emotional issues which influence attitudes. Therefore, it may limit the success of assisted reproductive methods [(Moghada., Aminia., Abdoli., Seigha., Falahzadeh & Ghasemi, 2011; Sohrabvand, & Jafarabadi, 2005)]. Infertility risk factors are such as: smoking, alcohol abuse, mother's age, and infections which awareness about them may help to decrease infertility by avoiding these risk factors (Abolfotouh, Alabdrabalnabi, Alback, Al-Jughaiman & Hassan, 2013). Different techniques of Assisted Reproductive Technology (ARTs) play important roles in infertility treatment (Widge, 2002). One of the most common ARTs is In Vitro Fertilization (IVF) [Ali, 2011; Quach, Mayer, McGarvey, Lurie & Do, 2005)]. Besides, there are other methods such as Intra Cytoplasmic Sperm Injection (ICSI), Gamete Intra fallopian Transfer (GIFT), Zygote Intra Fallopian Transfer (ZIFT), and Tubal Embryo Transfer (TET). Providing information about treatments and related tests clarifies the chance of failure or success, so patients accept treatments realistically with better readiness and without improper expectations. The more they know about treatments and their process, the self-consciousness and mental relaxation of patients will be better. By the way, a few studies were done to show the effect of general training on knowledge and attitude change of individuals [Quach et al, 2005)]. The present study concerning the importance of people's awareness on the effectiveness of ARTs attempted to clarify the level of awareness and knowledge of infertile women about ARTs.

### III.METHODOLOGY

This was a descriptive cross-sectional study carried out in two public hospitals namely Gousia Hospital and Lal Ded hospital in district Srinagar. Lal Ded hospital is the only renowned tertiary care maternity hospital in



Kashmir division. The hospital provides exclusive services and emergency and international care in the field of obstetrics and gynecology besides providing for facilities for antenatal and post natal care for women from all over the Kashmir. The hospital is also catering the gynecological and obstetrical needs of the patients visiting from different districts of valley as the district hospitals in Kashmir are not well equipped with such facilities and professionals as compared to Iel Ded hospital and moreover the faith in this hospital is one of the reason that most of the people without being referred come directly there instead of visiting their district or sub district hospital. All consenting infertile women that attended these two public hospitals between October 2017 to November 2017 and December 2017 to January 2018 respectively were interviewed in accordance with the questions on a pre-tested designed interview schedule. Women who have successfully undergone ART treatment before were excluded from the study. For this study, infertility was defined as inability of a couple to conceive despite two year of unprotected sexual intercourse. In this study in-vitro fertilization popularly known as 'Test-tube baby technology' was used as reference to ART. Protection of subjects rights in terms of anonymity and confidentiality was ensured. The easy-to-use interview schedule includes section on socio-demographic characteristics, source of ART information, affordability of ART treatment, knowledge about ART practices.

#### IV.RESULTS

**Table.1 Demographic Characteristics**

<b>Demographic Characteristics</b>	<b>Data N = 80</b>	<b>Percentage</b>	<b>Urban Data N= 40</b>	<b>Rural = Data N= 40</b>
<b>AGE(years)</b>				
<b>Mean and Range</b>	<b>34.7</b>		<b>35.8</b>	<b>33.7</b>
<b>Level of Education</b>				
Illiterate	<b>34</b>	<b>42.5%</b>	<b>13</b>	<b>21</b>
Middle	<b>7</b>	<b>8.75%</b>	<b>5</b>	<b>2</b>
Secondary	<b>21</b>	<b>26.25%</b>	<b>6</b>	<b>15</b>
Graduate	<b>12</b>	<b>15%</b>	<b>12</b>	<b>Nil</b>
Post Graduate	<b>6</b>	<b>7.5%</b>	<b>4</b>	<b>2</b>
Professional degree				



<b>Occupation</b>				
Homemaker	73		35	38
Govt job	5		4	1
Private job	Nil	Nil	Nil	Nil
Skilled work (tailoring/Ari work /Sozini work)	2		1	1
Business	Nil	Nil	Nil	Nil
<b>Economic Status</b>				
<b>APL</b>	47	58.75%	30 (75%)	17 (42.5%)
<b>BPL</b>	33	41.25	10 (25%)	23(57.5%)
<b>Duration of Infertility</b>				
Less than 5 years	45		26	19
Between 5 to 10 years	29		11	18
Between 10 to 15 years	4		2	2
Between 15 to 20 years	2		1	1

Eighty women with the diagnosis of primary infertility were interviewed for this study forty women was from urban areas and forty from rural areas. Analysis of the 80 Infertile patients showed their mean age to be 34.7 years. Mean age of patients in urban areas are 35.8 years and in rural areas are 33.7years with an age range of 18 to 48years. Mean duration of infertility was 4.1 years. It is found that there is no significant relationship between the duration of infertility and awareness regarding ART. Out of the 80 patients, 47 (58.75%) are APL (Above Poverty Line) and 33 (41.25%) are BPL (Below Poverty Line). Out of 80 Infertile women 34 (42.5%) are illiterate, 7( 8.75%) middle school, 21(26.25%), secondary school , 12 (15%) are graduate , 6 (7.5%) are post graduate. Analyses of data showed higher educational status significantly influence ART awareness. Table

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**Table 2. Awareness and knowledge about ART (Artificial Reproductive Technology) .**

<b>Awareness about ART</b>	<b>Data N= 80</b>		<b>Urban Data N= 40</b>		<b>Rural Data N= 40</b>	
<b>1. Do you know about Artificial Reproductive technologies?</b>	<b>Yes</b> 24 (30%)	<b>No</b> 56 (70%)	<b>Yes</b> 22 (55%)	<b>No</b> 18 (45%)	<b>Yes</b> 2 (5%)	<b>No</b> 38 (95%)
<b>2. If Yes, Which one</b>	<b>IVF</b> <b>ICSI</b> <b>IUI</b> <b>ZIFT</b>		<b>IVF</b>		<b>IVF</b>	
<b>3. How you came to know about it?</b>	<b>Internet</b> 2 <b>Newspaper</b> 10 <b>Doctors</b> 8 <b>Friends</b> 4 <b>Family</b> 2		<b>Internet</b> 2 <b>Newspaper</b> 9 <b>Doctors</b> 7 <b>Friends</b> 4 <b>Family</b> 2		<b>Internet</b> 0 <b>Newspaper</b> 1 <b>Doctors</b> 1 <b>Friends</b> 0 <b>Family</b> 0	
<b>4. Did you ever used the technique for conceiving</b>	<b>Yes</b> 3	<b>No</b>	<b>3</b>		<b>0</b>	
<b>5. If No, Why?</b>	<b>Economic Reasons</b>  <b>Social reasons</b>	<b>3</b>  <b>3</b>	<b>Economic Reasons</b>  <b>Social reasons</b>	<b>2</b>  <b>3</b>	<b>Economic Reasons</b>  <b>Social reasons</b>	<b>1</b>  <b>0</b>



	<b>Religious reasons</b>	<b>12</b>	<b>Religious reasons</b>	<b>11</b>	<b>Religious reasons</b>	<b>1</b>
	<b>No Guarentee</b>	<b>3</b>	<b>No Guarentee</b>	<b>3</b>	<b>No Guarentee</b>	<b>0</b>
<b>6. If Yes, Where ?</b>	<b>Outside state</b>	<b>3</b>				
	<b>Within state</b>	<b>Nil</b>				
<b>7. What were the results?</b>	<b>Failed</b>	<b>3</b>				
	<b>Successful</b>	<b>Nil</b>				

Eighty Nine women with the diagnosis of infertility were interviewed With IVF (In Vitro Fertilization) as a reference, about 56 (70%) of the population have not heard of the technology This gives an awareness rate of 24( 30%). In urban areas fifty five percent people have heard about IVF however a meager percent of highly educated infertile women (3.75%) belonging to urban setting have the complete knowledge about IVF. In rural areas the case is different only two percent of educated infertile women have heard about IVF. Mean duration of infertility was 4.1 years. When asked about the first source of ART information, patients heard from Newspapers 10 (41.7%), from Doctors 8(33.3%), from friends 4 (16.6%), from Family 2(8.3%), from Internet 2(8.3%).out of 24 participants only 3 highly educated women belonging to urban areas and higher socio economic group have used the IVF for conceiving. Table.2

## V.CONCLUSION

A major challenge to ART (Artificial Reproductive Technology) especially in developing countries is how to develop awareness and make the technology accessible with reference to availability and affordability. The World Collaborative Report on IVF (In Vitro Fertilization) revealed a satisfying spread of ART in the developed countries; however the same cannot be said in the developing countries where the need for this technology is highest (Adamson, Lancaster, De Mouzon, Nygren, Sullivan & Zegers-Hochschild, 2005). In an international survey, about seventy percent felt that IVF treatment should be reimbursable by the government (Bertarelli Foundation Scientific Board, 2000).In the developing countries reimbursement for fertility treatment has not





been in practice due to financial constraints and insensitivity to the plight of the infertile couple. With IVF (In Vitro Fertilization) as a reference, about seventy percent of the population have not heard of the technology. In urban areas fifty five percent people have heard about IVF however a meager percent of highly educated infertile women (3.75%) belonging to urban setting have the complete knowledge about IVF. In rural areas the case is different only two percent of educated infertile women have heard about IVF. The level of awareness about ART among infertile couples, in spite of the history of ART, is insufficient. It seems that concerning the characteristics of patients including their education and residency, despite of duration of infertility and age of respondent. There is widespread unawareness and misconception regarding ART among Muslim dominated Kashmir region of Jammu and Kashmir followed by social and economic reasons associated with ART. Moreover the respondent are reluctant to the use of ART because of the fear of failure as no guarantee is given to patients about the success rate of treatment.

The desire to have children should be considered as a normal need that ought to be met (Krones, Neuwohner, El Ansari, Wissner & Richter., 2006). Seeking a cure for infertility is not only permissible, but also encouraged in Islam. In Islamic law, all assisted reproductive technologies (ARTs) are allowed, provided that the source of the sperm, ovum, and uterus comes from a legally married couple during the span of their marriage. No third party should intrude upon the marital functions of sex and procreation. Surrogacy is not accepted in Islam. An excess number of fertilized embryos can be preserved by cryopreservation and may be transferred to the same wife in a successive cycle, while the marriage is intact. Using frozen sperm after the death of the husband is not permitted. The most important factor in ART treatment, especially in the developing countries where the treatment is privately funded in the midst of lack. Similar survey among the general population in Europe and the U.S showed that 90 percent knew of IVF, but less than 25 percent knew about the chances of success [(Bertarelli Foundation Scientific Board. 2000); (Milne, 1988)] and increased level of anxiety and depression that negatively impacts on their life [(Laffont. & Edelmann, 1994); (Newton, Hearn & Yuspe, (1990))].

It could be concluded from this study that there was a low awareness about ART and the study also showed how educational status and residency influenced level of awareness. This infers that as the educational level increases there is tendency for high awareness and ART acceptability as there is highly negative attitude towards ART. To eliminate this negative attitude is to create more awareness and increase the present level of education among women. It is recommended that government should do more on girl child education so as to increase their knowledge about infertility issues if confronted later in life. It is also suggested that ART centers should be sited in all the geo-political zones mainly in public hospitals so as to unburden the economic constrain of infertility. Again, since duration of infertility influences whether or not an infertile woman would opt for ART, as timely intervention increase the success rates therefore it is immediate need to generate awareness and knowledge as Infertility rate in Kashmir is 15% (Zargar, 2007) which is an alarming as there is widespread unawareness and misconception regarding ART among Muslim dominated Kashmir region of Jammu and Kashmir which need to be addressed within the Islamic laws.





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