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A Descriptive Study to Evaluate the Factors Contributing to Infertility among Desirable Couples in Selected Infertility Centers, Chennai.

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Abstract:

Infertility is considered as a global burden of disease. Being childless brings in lot of emotional and psychological stress among couples. Many eligible couples are not aware of the modifiable risk factors of infertility which can reduce its impact when considered earlier. This study aimed to determine the factors affecting infertility and to evaluate the couple's knowledge on modifiable factors of infertility. This study utilized a quantitative research design using both a survey method. The results of the study revealed the following. A total of 400 couples/respondents from 2 selected fertility centers were included in the study. The mean age of women were 30.91 years, the mean age of men was 34.6 years. The physical factors were in the mild level of severity among 76.47% of the couples. The psychosocial factors were at mild level of severity among 62.08% of the couples and socio-cultural factors were present in moderate level of their severity among 73.33%. Awareness on couples regarding modifiable risk factors like life style modification, exercise, healthy diet,

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cessation of smoking and alcohol intake, treating STI and supportive services, revealed that the knowledge was low among the couples.

Key words: factors of infertility, infertility, modifiable risk factors, social stigma and awareness among infertile couples.

Introduction:

Pregnancy is one of the joyful moments in a couple's life. Becoming parents brings in lot of adaptations in both the mother and father. Whereas childlessness is one ofthe major factor which has a negative psychosocial impact on couples.The awareness and response to childlessness, often termed as "infertility" various among societies. The WHO (2009) defines infertility as "a disease of the reproductive system defined by the failure to achieve clinical pregnancy after 12 months or more of regular unprotected sexual intercourse". The social stigma of a woman especially in India and South Asia face lot of emotional and personal disturbances (Mishra, K., Dubey, A. 2014). The situation of couples who are childless due to infertility can lead to mental and psychosocial disturbances like stress, anxiety and depression; it may also be the cause for partner abuse and violence (Taebi, M., et al 2016).

The incidence of infertility globally rates 12-15% is reported by the World Health organization, meanwhile the incidence of infertility in India is reported (WHO) to be ranging from 3.9 to 16.8% . The rates of infertility in India differs according to the states where in Uttarpradesh, Himachalpradesh and Maharashtra it is 3.7%, in AndhraPradesh it is 5% and 15% in Kashmir was reported by Adamson et al 2011. Couples with infertility are

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reported to have low self-esteem and negative feelings with unreal and too early expectations (Taebi, M., et al 2016). The infertility rate in Tamilnadu has increased to an alarming stage as reported by Deccan Chronicle news magazine July 21st 2015, based on national symposium report (FERTICON -2015) by Aakash fertility center. The article reported that 20% of couples are diagnosed to have infertility. The report also emphasized that 70% of the causes and risk factors are preventable and further requires ART treatment.

The effects of infertility various among societies and between men and woman, understanding the various factors of infertility will help in developing interventions which would benefit the couples and society. The types of infertility are Primary and secondary. The primary infertility occurs when the woman does not become pregnant after one year even after having unprotected sex. The term secondary infertility refers to the state where desirable couples were been able to become pregnant once at-least and now they are unable to do so (Ben-Nun 2015). The causes for infertility have been recorded as physical and emotional. However it remains multi-faceted and it varies from different world countries, their nutritional status, life style factors, use of contraceptives, sexually transmitted infections, male and female factors. The reason for secondary infertility is reported to be blockade of fallopian tubes (Ben-Nun-2015). The main aim of the study was to get the prevalence rates and contributing factors related to the fertility status of the selected community group. Hence the researcher planned to investigate the factors contributing to infertility among couples in selected fertility centerChennai, South India.

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The knowledge on reproduction and patient educational needs of Indonesian women were investigated by Linda,R.B., et al (2015). In this study a total of 212 infertile women were included to evaluate the knowledge their source and level. The results of the study revealed that their basic knowledge on reproduction and infertility was very high among Indonesian women. But their knowledge on etiology and management of infertility was poor among them. There was a high level of educational requirement from women. Their main soured for information on reproductive knowledge was the obstetricians and gynecologists. The above mentioned study shows that the infertile women had poor knowledge on causes and treatment modalities. Hence the researcher planned to include the assessment of couples knowledge on modifiable risk factors of infertility.

STATEMENT OF THE PROBLEM:

Descriptive study to evaluate the factors contributing to infertility among desirable couples in selected infertility centers, Chennai.

OBJECTIVES OF THE STUDY:

1. To estimate the contributing factors of infertility among the desirable couples in selected infertility centers.
2. To investigate any association between the physical factors contributing demographic profile of the desirable couples.
3. To study the psychosocial factors associated with infertility with selected demographic variables.
4. To evaluate the social cultural factors of infertility with selected demographic variables.

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5. To evaluate the knowledge and life style modification of respondents in the selected fertility center**.**

MATERIALS AND METHODS:

RESEARCH DESIGN:

A survey design is planned for the study. This study wanted to estimate the contributing factors of infertility among the desirable couples in selected fertility centers Chennai, South India. This quantitative research approach utilizing a descriptive survey design was used to describe the factors which have an impact on infertility couples and to investigate if any association exists between the demographic variables and the contributing factors.A questionnaire /survey was planned to evaluate the knowledge of desirable couples on modifiable risk factors of infertility.

SAMPLING TECHNIQUE AND SAMPLE SIZE CALCULATION:

Purposive sampling was adopted for this study.The sample size was calculated based on GBRfertility center, Chennai, GG fertility center data with 95% confidence interval a total of 400 samples was planned.

DATA COLLECTION PROCEDURE:

The questionnaire on contributing factors of infertility was developed in English and in regional language Tamil. The time taken to fill up the questionnaire was around 25 minutes. It contained 4 sections. Section A- with demographic details, Section B- with the physical factors, Section C-psychosocial factors and items pertaining to Socio-

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cultural factors and social stigmatization in Section D. The purpose of the questionnaire was explained to participants and they were asked to fill in the questionnaire. Following thatthequestionnaire to assess the knowledge on modifiable risk factors of infertility(Section E) was administered.

DEVELOPMENT OF TOOLS:

The instruments (self-administered questionnaire) were developed through extensive literature and based on recent research findings. The demographic section (A) contained 25 items including history to be filled up by the respondents. The tool was formulated on factors contributing to infertility; expert opinion was obtained from 7 nursing experts. Since many of the tools focused on quality of life and it was more related to the western counter parts, the researcher thought of developing a comprehensive tool to assess the contributing factors of infertility. The tool had both 'yes' and "no" items and a three point likertscale.Section B-physical factors with 9 statements to be rated, section-C on Psychosocial factors had 10 statements to be rated and section D on socio-cultural factors had 7 statements to be filled in by the respondents.Section E the knowledge /awareness on modifiable risk factors contained 10 questions to be filled in by participants. The knowledge evaluation tool consisted of questions on definition of infertility, male and female factors of infertility, and modifiable risk factors of infertility. More weightage was given to address the modifiable risk factors,this includes diet, exercise, life style factors like smoking, alcoholism, illegal drug use, obesity and overweight, and stress related to job, family, environment and friends. This was also prepared based on extensive literature review and expert opinion.

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DATA ANALYSIS:

The study has planned to use descriptive statistics mean, and standard deviation for quantitative data. The Chi-square tests were used to find out the association of contributing factors of infertility with the selected variables. The data was entered into the SPSS (Statistical package for Social Sciences) version 22.0 to analyze and to obtain the results.

SUMMARY OF FINDINGS OF THE STUDY:

The study data were entered into SPSS (Statistical package for Social Sciences) version 22 to obtain the results. The results are explained based on the objectives of the study.

Section A- Demographic variables of the study

A total of 400 samples were included in the study. The results of the study are discussed based on the objectives of the study.

DEMOGRAPHIC VARIABLES:

Age distribution of women: Majority of respondents (50.65%) belonged to the age group between 20-30 years. There were 26.50% of women in the 31-40 years age category and 15.48% of them in the 41-50 years and a minimal percentage (7.3%) less than 19 years age category.

Age distribution of Men: Majority of respondents (44.09%) belonged to the age group between 20-30 years. There were 32.02% of men in the 31-40 years age category and 23.88% of them in the 41-50 years and none in the less than 19 years age category.

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Educational qualification of respondents: An equal percentage of men 31.49 and 34.73 percent of women had primary and a graduate level of education. A minimum percent (2.62) of men were illiterate, 21.52% had secondary education and 9.57% had a post graduate educational status. When the women's educational status was analyzed it was found that majority (55.64%) of women had undergraduate level of education, 26.54% had a primary educational status, 13.64% had a secondary education, 3.14% had a post graduate education and only a minimum percent of women (0.78%) had no education.

Occupation of respondents: Majority of men (45.49%) work in private companies mainly It field (Information technology), 26.77% of men had a business run by them, 7.61% had a government job, 14.69 % of Men went for a daily wages or coolie work and a minimal percent (5.5%) were not working. Among women majority (43.30%) of them worked for private company jobs, 29.13% went for daily wages jobs, 18.89 % of them were housewives (not working) , 5.51% of women had government jobs and a minimal percent (3.14%) did business.

Religion of respondents: Majority of respondents (58%) followed Hinduism, 29.39% followed Christianity, 11.02% were Muslims and a minimal percent (1.57%) followed other religions like Jainism etc.

Family type of respondents: Majority of them (60.10%) belonged to nuclear family and 39.89% lived in a joint or extended family.

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Social class of respondents: Majority of them (56.69%) belonged to the middle class, 22.83% were in the lower social class, and 20.47 % belonged to the high class society.

Monthly Income of respondents: Majority of them (43.04%) earned between 10,001-20,000 INR Per month. 29.13% of respondents earned 21,001-30,000 INR per month, 22.57% of them earned above 31,001-INR per month and a minimal percent (5.24%) earned between 5,000-10,000 INR per month.

Type of marriage of respondents: Majority of them (69.02%) had a non-consanguineous marriage and 30.97% had a consanguineous marriage.

Number of years of married life of respondents: Majority (68.76%) of the couples were married less than two years, 16.01% were married between 2- 5 years and 15.22 % were married for five years and more.

Age at menarche of women: Majority (88%) of them attained menarche at the age between 13-15 years, a minimal percent (2%) attained puberty before 11 years of age and 10% of them attained menarche above 16 years of age.

Menstrual pattern of Women: Majority of women (72%) had regular menstrual cycle monthly, where 28% of them had history of irregular cycles.

Obstetrical history in women:-Majority of women were nulliparous and only 9% of them were with history of abortions, and none of them had living children at present.

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Hemoglobin level of women:The hemoglobin level of women attending the infertility clinics was analyzed. Majority of women (51.9%) had a normal level of hemoglobin, 28.3% had mild anemia and 19.79% had a moderate level of anemia.

Sexual intimacy of couples: Before diagnosis of infertility majority of them responded "yes" as being contented and 14 % not contented. Meanwhile after diagnosis of infertility majority (62%) felt contented and sexually intimate and 38% felt not intimate after diagnosis of infertility.

Use of contraceptives by respondents: Majority (47%) of respondents used condom as a barrier method of contraception, 32 % had reported use of oral pills and 21 % had used other methods like copper T.

Nutritional habits of respondents: Majority of them (68%) consumed non-vegetarian foods, 12.5% consumed vegetarian foods and only 10% of them often consumed fast food in a weekly basis.The daily intake of caffeine (more than allowable limit of 300 mg/day) varied among men and women as 38% and 21% respectively. The reason for this could be that men often go out for work and tend to drink coffee with friends and office mates. Homemade food was consumed by majority of women (61%) and 59% of men. Outside food was consumed by 3% of women and 7% of men. More over the respondents felt that intake of non-vegetarian with broiler chicken, preserved tinned foods, vegetables and fruits either hybrid or grown with pesticides are also causes for reduction in fertility. This information is discussed under socio-cultural factors also.

Past medical and surgical history:the past medical and surgical illness the infertile couples were analyzed and the following results were obtained. Only 3% of women had

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previous surgical histories including tonsillectomy and laparotomy. Very minimal proportion 1% of men reported to have diabetes mellitus, 1% of males and 0.5 % of females had high Blood pressure or hypertension, 0.25% of men reported heart disease, and 0.5% of men had asthma. Urinary tract infections were more commonly reported among 11% of women and 6% of women had PID, and none of them had Sexually transmitted diseases or, abnormal PAP smear, no one reported cancer or reported any form of drug intake. 3 % of males and 2% of females had drug allergies.

Life style pattern of respondents: Smoking was reported among 26% of males, both male and female did not report illegal drug use, 13% of men reported alcohol intake, both men and women were not exposed to radiation or environmental pollutants and 31% of males did regular exercise and only 12% of women reported regular exercise.

Anthropometric parameters: Men had a mean height of 175.08%, and women had a mean height of 159.01cms. The mean weight of men was 77.01 and 60.76 among women. The BMI was 24.78 in men and 24.01 in women.

Living area of desirable couples: 39.01 % of respondents who attended the selected fertility centers were from urban areas within Chennai, 29.98% were from other metropolitan cities within India and 31.01% were from rural areas and villages (extension of remote areas). The data shows people from all areas are equally affected by infertility and it does not depend on area of living.

Objective:1. To estimate the contributing factors of infertility among the desirable couples in selected infertility centers.

Contributing factors/physical:

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The levels of physical factors which contribute to infertility are summarized here. The physical factors considered are age, blockade of fallopian tubes, PCOD and endometriosis, infection, fibroid uterus, physical issues in partner, medical conditions of partner and weight of partner. The scores are based on presence of number of physical reasons within the couples, it is categorized as mild (1-4 factors) moderate (5-7 factors) and severe (8-10 factors). Majority (76.47) of the respondents had mild physical factors which contribute to their infertile status, 12 % of respondents had moderate number of physical factors and 11.61% of respondents had severe physical factors which contribute to their infertility status.

Psychosocial factors contributing to infertility:

The psychosocial factors considered were feeling anxious by samples and their partners, feeling dishonored, guilt feeling, crying spells and support from friends and family were considered. The majority of samples (62.08%) had mild level of psychosocial factors which was identified as the contributing factor while on infertility treatment.

Socio-cultural factors contributing to infertility:

The Socio-cultural factors considered are Obligation of having a child in their religion, acceptance of polygamy in their religion, family, neighbors, in-laws support towards their fertility status and participating in family functions were included. Majority of the respondents (73.33%) of them had moderate level of socio-cultural factors which they underwent before and during the infertility treatment.Majority of them felt that global warming has caused changes in food we eat, the air we inspire and the water we drink.

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On the whole there is lot of pesticides added in fruits, vegetables and chicken. The preservatives also bring sin lot of changes in food items used. These adulterants are expected to cause changes in health of an individual affecting the fertility and reproduction.

Objective:2: To investigate any association between the physical factors contributing demographic profile of the desirable couples**.**

The analysis showed the age of women showed significant association (P-0.027) with physical factor, educational status of women was significant at 0.048 level and rest of the variables did not have any association with the physical factors of infertility.

Objective:3: To study the psychosocial factors associated with infertility with selected demographic variables

Income of family was a significant at P=0.000, the family type was significant at P=0.000 level, and the duration of married life in years was significant at P=0.013 level. The rest of the psychosocial factors did not have any significant association.

Objective: 4: To evaluate the social cultural factors of infertility with selected demographic variables.

The age of respondents was significant at P= 0.031 level, the income of family variable was significant at P=0.000 and religion of respondents was significantly associated at P=0.000. Duration of marriage was significant at P=0.011. Rest of the demographic variables did not have any association with the socio-cultural factors.

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Objective 5:

To evaluate the knowledge and life style modification of respondents in the selected fertility centers.

With regard to definition or meaning of infertility the scores was 58.8% (as many of them knew it). Regarding intake of caffeine (coffee) score was 24.01. With regard to healthy diet score was 50.10%, obesity and overweight test scores was 42.18%, body mass index scores was 10.21% regular exercise scores was 31.18%. Knowledge on smoking and use of tobacco scores was 41.01%. With regard to alcohol consumption test scores was 39.06%, Use of illegal drugs scores were 12.01%. With regard to other modifiable factors knowledge on job stress, scores were 44.30%, family support was 48.10%. In the area of no support from neighbor's scores was 32.16%. Support from friends was 29.78%, in the knowledge about exposure to radiation scores was 12.69%. When asked to list the male factors of infertility scores was 31.03%, female infertility factors scores were 43.63% and combined causes scores were 7.61%. The results show that the awareness or knowledge level on modifiable risk factors is limited or low among couples. Many studies have been reported to assess the knowledge of couples on infertility in general, but no studies have reported knowledge on modifiable risk factors of infertility. The present study had determined only the awareness or knowledge of couples on modifiable risk factors and hence cannot be compared with other results. The reason for choosing modifiable risk factors was that it would help couples to modify their life style and increase their chance of fertility. Physical factors and others cannot be

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modified and hence evaluation of knowledge on modifiable risk factors was felt most appropriate.

RECOMMENDATIONS:

1. The researcher would like to suggest future scholars to investigate the quality of life among infertile couple to have an in-depth understanding.
2. Further studies can be conducted to provide interventions to cope up with the stress related to social stigma related to infertility and childlessness.
3. The incidence and prevalence of infertility and its contributing factors can be conducted using larger population and as a longitudinal study.
4. A comparative study can be conducted to know the contributing factors among different regions of India.
5. Education and awareness using structured teaching program to college going men and women who are about to get married can be given to see if has an effect on changing their lifestyle prior to marriage.

LIMITATIONS OF THE STUDY:

1. The study findings can be generalized as it was only inselected fertility center in Chennai.
2. It was very difficult to get the participants to talk about and get information regarding infertility which is a very sensitive issue in the society.
3. Since the content area of infertility is very vast,evaluating the knowledge on modifiable risk factors was a challenging task within the limited period of time.

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