Knowledge, attitude, and practices about male infertility among men and women in slums of Chennai, Tamil Nadu: a cross-sectional study

Saravanan Chinnaiyan*, Bhavya Babu

Research Assistant, SRM School of Public Health, Chennai, Tamil Nadu, India

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*Correspondence:
Saravanan Chinnaiyan,
E-mail: drsharav13@gmail.com

ABSTRACT

Background: Infertility is a major public health problem that affects 15% of the global population. Fertility is the ability to conceive pregnancy and has a positive social value whereas; infertility has a negative social value in Indian culture. So, infertility is a serious problem in developing and undeveloped countries are more than of biological.

Aim: To assess the knowledge, attitude, perception, and practices, and myths about male infertility in the slums of Chennai.

Methods: This is a cross-sectional study carried out in the Slums of Chennai from January 2020 to March 2020. A total of 125 male and 125 female participants of the age group ≥18 years were recruited for the study by simple random sampling.

Results: The study revealed that there is adequate knowledge of the common causes of infertility, but clinical knowledge is comparatively low. Both men and women shared almost equal knowledge of infertility.

Conclusion: Educational programmes, regular campaigns by Accredited social health activists (ASHAs) and the involvement of community are recommended to increase knowledge about the causes of infertility as well as decrease the stigma associated with this condition.

Keywords: Infertility, Reproductive health, Male infertility, Knowledge

INTRODUCTION

According to the World Health Organization (WHO), infertility is a failure to achieve a clinical pregnancy after 12 months or more of regular unprotected sexual intercourse.1

About 8-10% of couples of reproductive age experience infertility and approximately 40% of male infertility is the major factor. Another 40% is due to abnormalities of woman’s reproductive system and the remaining 20% involve couples that both suffer reproductive difficulties.2 But women seem to be more affected and undergo physical and mental stress, threats of divorce or remarriage for the men, and even physical abuse by both spouse and in-laws of the family.

Men are most likely to be infertile if they had sperm counts below 13.5 million, less than 32% sperm motility; fewer than 9% of sperm had a normal appearance. The causes of infertility in females were ovulation problems (20-25%), tubal problems (15-25%), endometriosis (4-8%), cervical mucus hostility (1-2%), and uterine problems (2.5%). Unexplained infertility was seen in 5-10% of couples.4

Several studies have also established that the adverse impact of lifestyle factors such as smoking, alcohol and drug abuse, unhealthy diet, due to tight outfits, stress, anxiety by improper work-life balance and unsafe sexual

Medical Research, SRM School of Public Health, Chennai, Tamil Nadu, India

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practices had proved as causes for infertility.\textsuperscript{6,7,10} Many studies have been conducted to assess the level of knowledge in men and women of various age groups regarding the factors causing infertility in both sexes.\textsuperscript{5,7,11} Our aim of the study is to ascertain knowledge, attitude, and practice about male infertility of people residing in slums of Chennai, where no scientific studies are explored.

\textbf{METHODS}

\textbf{Study area and sampling}

This is a community-based cross-sectional study conducted in the slums of Chennai, Capital of Tamil Nadu. We recruited 250 samples, 125 males, and 125 females by simple random sampling (lottery method). The study was conducted from January 2020 to March 2020.

\textbf{Inclusion criteria}

Only the participants of 18 years old and above of both male and female, and those who expressed their willingness to participate in the study were selected as samples

\textbf{Exclusion criteria}

Those who refused to participate in the survey or were not there during the survey after three visits were excluded from the study.

\textbf{Data collection tools}

Data were collected through a pre-tested questionnaire. It consists of social and demographic features, knowledge and other factors. The questionnaire was prepared in English and Tamil (local language) for the illiterate or vernacular medium people.

\textbf{Statistical analysis}

The data obtained from the study was entered and coded in Microsoft excel and exported to Statistical package for social sciences (SPSS). The data has been analyzed using the SPSS version 17. Univariate Statistics was performed.

\textbf{Ethical consideration}

The objectives of the study, purpose and confidentiality of the data have been explained to each participant before the commencement of the study. The participation is voluntary, and they had full right to withdraw from the study at any point. Written informed consent was obtained.

\textbf{RESULTS}

A total of 250 participants participated in this study. The mean age of the participants was 33.2. The majority of our participants were from the age group of 30-49. Nearly 76\% of the people were married, only 32\% have been graduated from the college and 42.8\% of participants were working in the private sector. The majority of participants were from low economic backgrounds (Table 1).

\begin{table}[h]
\centering
\caption{Social and demographic characteristics.}
\begin{tabular}{|c|c|c|}
\hline
Social and demographic variables & Frequency & \% \\
\hline
Gender & & \\
Male & 125 & 50 \\
Female & 125 & 50 \\
Total & 250 & 100 \\
\hline
Age in years & & \\
16-29 & 65 & 26 \\
30-49 & 160 & 64 \\
50-59 & 20 & 8 \\
Above 60 & 5 & 2 \\
\hline
Marital status & & \\
Never married & 42 & 16.8 \\
Married & 189 & 75.6 \\
Widow/divorce & 19 & 7.6 \\
\hline
Education & & \\
Middle school and below & 35 & 14 \\
Higher school & 41 & 16.4 \\
Secondary School & 43 & 17.2 \\
Diploma degree & 50 & 20 \\
Undergraduate & 60 & 24 \\
Post-graduate and above & 21 & 8.4 \\
\hline
Occupation & & \\
Student & 31 & 12.4 \\
Private sector & 107 & 42.8 \\
Public sector & 30 & 12 \\
Self-employed & 47 & 18.8 \\
Unemployed & 35 & 14 \\
\hline
Income category & & \\
Up to Rs. 8000 & 67 & 26.8 \\
Rs. 8001 to Rs. 16000 & 46 & 18.4 \\
Rs. 16001 to 24000 & 56 & 22.4 \\
Rs. 24001 to 32000 & 49 & 19.6 \\
Rs. 32001 to 40000 & 28 & 11.2 \\
Rs. 40001 to 48000 & 4 & 1.6 \\
\hline
\end{tabular}
\end{table}

\textbf{Factors influencing infertility}

Most of the participants responded the reasons for infertility as both male and female (51.2\%) followed by either, female alone (12.4\%), and male alone (14.8\%), either male or female (21.6\%) (Figure 1). Majority of the population was aware that (70.4\%) smoking and alcohol consumption was the main reason for infertility and vigorous exercise (20.4\%) does not cause infertility (Table 2).
Table 2: Factors influencing infertility.

| Factors                          | Males (n=125) | Female (n=125) | Percentage of acceptance |
|----------------------------------|---------------|---------------|-------------------------|
| Urinary tract infection          | 58            | 67            | 79                      | 46            | 54.8          |
| Smoking/alcohol                  | 90            | 35            | 86                      | 39            | 70.4          |
| Vigorous exercises               | 30            | 95            | 24                      | 101           | 21.6          |
| Sexually transmitted diseases    | 73            | 52            | 45                      | 80            | 47.2          |
| Previous use of contraceptives   | 53            | 72            | 48                      | 77            | 40.4          |
| Constant heat around genitals    | 77            | 48            | 85                      | 40            | 64.8          |
| Obesity                          | 50            | 75            | 62                      | 63            | 44.8          |
| Psychological stress             | 80            | 45            | 71                      | 54            | 60.4          |
| Hormone imbalance                | 70            | 55            | 84                      | 41            | 61.6          |
| Late marriages                   | 49            | 76            | 73                      | 52            | 48.8          |
| Diabetes mellitus/other NCD’s    | 33            | 92            | 36                      | 89            | 27.6          |
| Side effects previously used medications | 17          | 108           | 11                      | 114           | 11.2          |

Table 3: Attitude towards male fertility.

| Attitudes towards male fertility | Males (n=125) | Females (n=125) | Yes | No | Yes | No |
|----------------------------------|---------------|-----------------|-----|----|-----|----|
| Infertility: a disease?          | 40            | 85              | 61  | 64 |     |    |
| Need medical treatment?          | 101           | 24              | 105 | 20 |     |    |
| Do you think if a couple conceives once, they might have problems in conceiving again? | 50   | 75   | 53  | 72 |     |    |
| Who do you think should investigate first? | 13  | 19   |     |    |
| Husband                          | 19            | 17              |     |    |
| Wife                             | 93            | 89              |     |    |
| Who in your mind should be your preference for treating infertility? | 110 | 105 |     |    |
| Allopathy                        | 14            | 17              |     |    |
| AYUSH                            | 1             | 3               |     |    |
| Do you think infertility is due to god’s will? Or curse? | 3   | 122  | 6   | 119|     |    |

Table 4: Perception and myths associated with male fertility.

| Perception and myths               | Males (n=125) | Females (n=125) | Yes | No | Yes | No |
|------------------------------------|---------------|-----------------|-----|----|-----|----|
| Is male infertility ground for divorce? | 79            | 46              | 82  | 43 |     |    |
| If the husband is infertile, do you think the wife can divorce him and remarry? | 62            | 63              | 74  | 51 |     |    |
| Do you know anything about IVF?    | 76            | 49              | 83  | 42 |     |    |
| Which is better?                   | 74            | 63              |     |    |
| Adoption                           | 51            | 62              |     |    |

Table 5: Practices to improve infertility.

| Practices to improve fertility     | Males (n=125) | Females (n=125) | Yes | No | Yes | No |
|------------------------------------|---------------|-----------------|-----|----|-----|----|
| Allopathy medicine                 | 105           | 20              | 100 | 25 |     |    |
| Quitting smoking and alcohol       | 81            | 44              | 89  | 36 |     |    |
| Eating healthy food                | 69            | 56              | 64  | 61 |     |    |
| Healthy lifestyle                  | 101           | 24              | 99  | 26 |     |    |

The majority of the population (82.4%) was aware that infertility could be treated. 72.8% of people responded that both men and women should be investigated and almost (86%) told that the allopathic system of medicines would be their foregoing treatment. Only 3.6% of the respondents have responded that fertility is a god’s will (Table 3).

On taking the perception, 40% responded that they could divorce and remarry. Nearly 59.6% of respondents knew about in vitro fertilization. 54.8% and 45.2% opted for invitro-fertilization and adoption (Table 4).
Taking regular medications (82%), living a healthy lifestyle (80%), quitting alcohol and smoking (68%) were the best practices to improve fertility (Table 5).

DISCUSSION

Our study was designed to collect information about knowledge, attitudes, and practices about male infertility in the slum population of Chennai, Tamil Nadu. Knowledge about infertility is inadequate in many parts of the world.11 A global survey of almost 17,500 women (mostly of childbearing age) from ten countries revealed that knowledge regarding fertility and the biology of reproduction was poor.15 On the contrary, this finding is in disagreement with the findings of our present study in which the level of knowledge was generally high, as identified by the high mean percent score for knowledge among the study participants.

Countless factors have been determined which influences infertility (example: urinary tract infection, smoking/alcohol consumption, obesity, etc.). Among the various influencing factors, the highest reported factor among the study population was smoking and alcohol consumption with 70.4% of acceptance. Several studies have noted noxious effects of tobacco before and after conception, in both women and men, from the smoker’s gametes to their offspring.13,14,15 Yet 29.6% of our study population did believe that quitting smoking and alcohol consumption improves fertility. According to a multicentric study conducted by WHO from 1982 to 1985, 20% of cases were attributed to male factors, 38% to female factors, 27% had casual factors identified in both partners, and 15% could not be satisfactorily attributed to either partner.16 However, in our study, 14.8% of participants reported that infertility was caused by male factors alone, 12.4% suggested that it was caused by female factors alone, 51.2% suggested both male and female factors were responsible, and 21.6% said either it was male or female factors that cause fertility.

A similar study conducted among Saudi couples by Abolfotouh et al states that the majority of their study population agreed that infertility can be treated. This finding is similar to our study finding in which 82.4% of them reported that infertility can be cured. Moreover, the same study conducted by Abolfotouh et al claimed that most of their participants reported that both partners should be investigated at the same time, and obstetrics and gynecology specialists were their first preference for treatment. According to our study, considering the investigation and treatment preference the results were comparatively similar to that study with 72.8% insisted that both the partners should get the investigation done for infertility and 86% preferred the allopathic mode of treatment.

Because of the social consequences of infertility, among the various available options, 40% responded that they can divorce and remarry. A study by Wang J et al and Casper R et al reveals the recent advancements in invitro fertilization for the past three decades produces strong shreds of evidence for the treatment of fertility.17,18 Thus 54.8% and 45.2% opted for invitro-fertilization and adoption.

Limitations

The study was conducted in metropolitan slums. It would be better if it had been compared with semi-urban and rural, as traditional medicine or Ayurveda, yoga and naturopathy, unani, siddha and homeopathy (AYUSH) could be high compared to our study.

CONCLUSION

Infertility is suffering for both women and men. Infertility is only a biological problem, but people tends to act as a social problem especially in the developing countries. We need to encourage both men and women to come with their family support to the clinic and appropriate counselling be provided to couples who attend with an aim of continuity in their treatment. Education programs, regular campaigns by ASHA's and the involvement of community are recommended to increase knowledge and decrease the stigma associated with this condition.

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