CHAPTER V

Summary and Conclusion
The thesis embodies the study of bio-medical and social aspects of infertility in a cross-cultural, traditional population of Tirupati, a world-renowned pilgrimage centre in the Southern Indian state of Andhra Pradesh. For this purpose, a total of 3500 couples were randomly chosen from the general population to estimate the levels of infertility and 1229 couples from three infertility clinics to study the nature and clinical aspects of infertility. The study further probed into the manner by which the infertile couples attempted to resolve their reproductive problems of bio-medical and social nature with the help of the available assisted conception technologies (ART). Relevant measurements and clinical investigations were carried out on the infertile couples based on which the types of disorders were discerned. Accordingly the couples were categorised. In order to find out association between sociological, psychological and environmental factors of infertility and the implications of such association, 500 couples of the main clinical data have been examined. Thus the population selected for the purposes of our study has been assumed to represent the whole population of the society which is in the throes of socio-economic transition.

The work has been mainly aimed to bring to light a comprehensive bio- anthropological and social-psychological picture of the infertility of a hitherto unstudied traditional and orthodox population from this part of the Indian subcontinent. In this endeavour both the fertility levels of the general population as well as the nature of disorders associated with the infertility of either sex have been
The infertile females (51.7\%) are of a higher proportion than that of males (42.6\%). Only a small frequency of the couples (N: 71, 6\%) are reported to have problems of infertility regardless of sex. The study demolishes the generally-held view of the society that the females alone are responsible for infertility because of the fact that the problem is characteristic of the male members as well.

2. The male infertility is mainly the result of deviation in the normal sperm distribution in the semen. Many such males range between oligospermia to azoospermia often caused by premature ejaculation. The testicular biopsy on certain males indicates the nature of spermatogenesis apart from hydrocele and varicose vein in the scrotum as common factors.

The female infertility is complex in its expression. Its causative factors are small size uterus, ovulation and hormonal imbalance. Majority of the females also reported the problem of tubal blocks.

The success rate of infertile couples becoming normally fertile after undergoing the required examination and treatment shows an encouraging trend (39\%). In terms of absolute numbers, there are 483 couples (M: 187, F: 296) recovered from their infertility and became normal out of the studied sample of 1229 of them.
3. The unexplained infertility in both sexes is found to be associated with body constitution and mating types all of which include major histocompatibility complex. As per the BMI classification of infertile couples, most of the infertile couples are obese indicating its role in the causation of infertility. There is significant bisexual variation for obesity, with the females occurring in higher frequency than males. Couples with grade-III obesity are affected by disorders like hydrocele and varicocele in males and PCOS in females.

Considering the relationship of infertility with mating patterns, it is found that most of the infertile couples (55%) fall in the heterospecific mating type suggesting that this could be an added cause of infertility or major histocompatibility complex (MHC).

That there was deterioration in male sperm quantity and quality, consequently leading to infertility, has been known from the influence of environmental factors like alcohol consumption and smoking containing tetragons that may have affected the reproduction. It is interesting to note that the bulk of male samples (96%) of our study were found to be habituated to these addictions. The male unexplained infertility is thus increasingly associated with the environmental factors.
4. The social problems of infertility are many. The psyche of infertile couples indicates that females are more sensitive, feel shocked, depressed and experience increased sense of isolation than males. Loss of self esteem is a major effect of infertility. Stress which is inevitable arises from many quarters: it could be, first between couples, later, family and thus lastly, social stress. The traditional and orthodox infertile couples as a last resort take to magico-religious beliefs and indulge in lot many folklore activities rather than taking the problem with the required openness to available ART.

The results of the study highlights the following points of significance and social relevance.

The first and foremost of these is the use and utility of assisted conception technologies by the infertile couples. A little over one-third proportion of the infertile couples from the general population has been found to willingly volunteer to avail ART for the resolution of their infertility issues. This is a welcome sign which augurs well to be in place as a development indicator of the traditional orthodox society.
One other significant development indicator is the post-treatment success rate of infertile couples of Tirupati population (39%), which is in close agreement with that prevalent in other world populations.

Some of the assisted technologies like IVF and IVF-ET, however, do not still find favour with the individually-affected couples as also the society in general. In the present study, although the subjects have derived commendable relief for their infertility problems from the fruits of the medical technological advances, which in a nutshell marks an important milestone in the human cultural evolution. Thus the acceptance of technological innovation such as the ART by the society as has been the case of Tirupati population renders it possible to think that the problem of infertility is no more a social curse, though the attitude of the affected couples in a way still appears to be influenced by their social traditions and lores.

Our work on the study of bio-medical and social aspects of infertility among the Tirupati cross-cultural population enabled the delineation of the levels of infertility in the general population and also among the infertile couples who sought assisted conception technologies in the resolution of their reproductive problems from the three infertility clinics. Our findings revealed that this tradition-bound orthodox society with its cultural heritage hardly demonstrated any aversion to the use of available ART to its benefit and advantage from the point of its biological safety and economic prosperity with particular reference to the resolution of its infertility.
problems, including disorders. The economic well-being of the people as also the quality of the life-styles are well indicated by the changes in the bio-demographic picture of the population. The results of the present attempt call for close comparison with similar other works to have a better understanding of the biological and economic dimensions of the population and society at large. This is especially useful for a multiethnic, multilingual and multireligious country like India which is in the throes of development. This is in a way is the ultimate goal of any nation and India is no exception in the matter, as studies of this nature contribute to the nation's development and all other spheres of human life and activity.

Implications and Recommendations:

1. The problem of infertility as found in the general population of Tirupati is substantiated by its occurrence in clinical population too. This micro-level investigation suggests that similar studies can be extended to other parts of the country to understand the nature and variation of infertility and their implications in the contact of the country as a whole.

2. It is intriguing to observe the existence of many an infertility clinic in the private sector which are being thronged by the infertility-ridden couples irrespective of their economic status for counselling, consultation as also for seeking solutions to their reproductive problems through advanced bio-medical technological methods and techniques despite their being considerably expensive. This would not have been the scenario had there been such institutions functioning and
facilities available under the auspices of the Governments that be. The crux of the issue is that the Government-run hospitals and institutions are deeply involved in the fertility-control programmes incurring heavy expenditures in this sector which led to the near total negligence of the infertility based programmes. Added to this situation is that the private infertility clinics and centres as also medical hospitals and institutions care to provide not only the best expensive in terms of doctors and supporting staff but also in augmenting for proper infrastructural facilities as well as quality services and above all the extension of humane approach and sympathy towards the infertility affected couples. Unless the Governments have a political will to rectify these deficiencies in the institutions under their control and supervision, the problems continue to plague them beyond any remedial measures.

3. During the course of our investigation and study, it has been noticed that the counselling provided to the concern individuals and couples was often inappropriate, inadequate and less positive. As a result of this many of the unexplained infertility cases are often turned out to be fertility cases. Further there appears to be a dire need to carry out counselling among in-laws, particularly the mother-in-law of the affected females as lack of this often leads to psychological warfare and disharmony in the household.

4. It is interesting to find the affected persons and society positively responding to the use of the medical technology (ART) in the absence of which they had to face embarrassment, guilt, ostracism and humiliation. Awareness of new technology
consequently resulting in its acceptability and ultimate use by the society for the resolution of the individual infertility problems and disorders clearly reflects in the interest and concern shown by the humanity in its well-being.

5. The finding of the overall success rate of the infertility cases (39%), shows that the population still appears to be in the process of change and adjustment to the modern approaches of medicine. The discontinuity of the treatment by some couples owes to the association of many life matters, and indicates that the population is in the process of change from tradition to modernity with the due approval and participation of society. Infertility is not a mere medical problem of the affected couples alone but it is a highly influenced one by the social and psychological conditions with due role of the society in its cure rather than medical intervention only.