Acknowledgment:

Present work is a result of help rendered to me by many authorities, teachers and friends. It is my pleasant duty to express my sincere thanks to all of them. I wish to acknowledge and express my thanks to the following people who in a variety of ways have assisted me in the completion of this thesis.

The study no doubt benefited from the critical and sound judgment, continuous support and encouragement, unwavering dedication and availability of my supervisor, Prof. C.S. Yajnik and co-advisors Dr. K. J. Coyaji and Dr. T. V. Kamat. I have enjoyed working with my Professors. I appreciate the support, encouragement, throughout the four years period of this thesis. Thank you so much for providing the general guidance and for directing the course of this thesis, and above all for making me feel comfortable and welcomed at knocking on your door at anytime without appointment.

My immense thank goes to the all Diabetes Unit staff, King Edward Memorial Hospital and Research Center (KEMHRC), which provided the companionship for this doctorate study. Especial thanks to Mrs. Pallavi Yajnik, Dr. Suhas Otiv, Dr. Ambadekar, Dr. Naik, Dr. Kumaran, Dr. X. K. Coyaji, Dr. Umesh Vaidia, Mrs. Smita Darpa, Mr. Dattatray Bhat, Mr. Kondiram Raut, Ms. Neha S. Gurav, Ms. Deepa Raut, and Ms. Pallavi Hardikar. I’m grateful to all nurses of nursing home and obstetric-ward, all gynecology residents and social workers in antenatal clinic KEM hospital, for providing me a conductive atmosphere which has contributed to the smooth progress of this thesis.

I am grateful for the scientific discussions with Dr. Shobha Rao (Director Research and Training, Society for Initiatives in Nutrition and Development), Dr. Roshan Kazi (head of management department Alana college), Dr. Shaunuk Kulkarni (faculty of Anthropology department, university of Pune), Dr. Bill Brashier (Chest research foundation), Dr. Anjali Radkar (Bio-statistician faculty of BMCC college), Ms. Anjelin Jeyakumar (faculty of health science department University of Pune).

Also I would like to transfer my heartedly gratitude to Gupte hospital, especially Dr. Sanjay Gupte (director), Dr. Gayatri, Dr. Sima Tiwari, all lab, reception and antenatal clinic staff.
I equally appreciate technical assistance provided by Dr. Mrs. Saruj S. Ghaskadbi, and Ms. Jhankar. D. Acharya for plasma analysis of vitamin C in zoology department, University of Pune.

Special appreciation goes to the Vice-Chancellor, the Registrar, the Dean, Faculty of Science, the Head and the entire staff of the Department of Health Sciences, University of Pune, for their support and encouragement.

Last but not least I’m grateful to the pregnant women and their families for their cooperation. And all people who made this research possible.