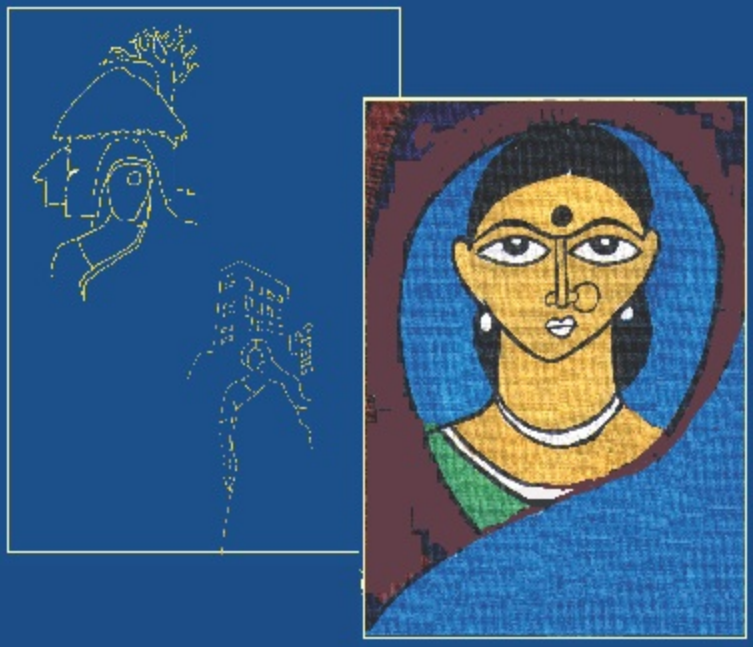
ABORTION IN MAHARASHTRA: INCIDENCE, CARE AND COST



Shelley Saha
Ravi Duggal
Manasee Mishra

Assisted by
Sugandha More
Bhagyashree Khaire

Cehat
Centre for Enquiry into Health and Allied Themes

ABORTION IN MAHARASHTRA : INCIDENCE, CARE AND COST

Abortion in Maharashtra: Incidence, Care and Cost

Shelley Saha
Ravi Duggal
Manasee Mishra

Assisted by
Sugandha More
Bhagyashree Khaire

Centre for Enquiry into Health and Allied Themes

December, 2004

First published in December 2004

By
Centre for Enquiry into Health and Allied Themes
Survey No. 2804 & 2805
Aaram Society Road
Vakola, Santacruz (East)
Mumbai - 400 055
Tel. : 022-26673154 / 26673571
Fax : 022-26673156
Email:cehat@vsnl.com
Website : www.cehat.org

Copies also available at
Centre for Enquiry into Health and Allied Themes
Aman Terrace Flat No. 3, Plot No. 140,
Dahanukar Colony, Kothrud, Pune - 411 029.
Tel. : 020 - 25451413, 25452325
Email: cehatpun@vsnl.com
Website: www.cehat.org

ISBN: 81-89042-32-7

Cover Design by Shirish Ghate

Printed At:
Satam Udyog
Parel, Mumbai – 400012

PREFACE

Abortions have been around forever. But at different points of time in history it has received attention for differing reasons, some in support of it, but often against it. Abortion is primarily a health concern of women but it is increasingly being governed by patriarchal interests which more often than not curb the freedom of women to seek abortion as a right.

In present times with the entire focus of women's health being on her reproduction, infact preventing or terminating it, abortion practice becomes a critical issue. Given the official perspective of understanding abortion within the context of contraception, it is important to review abortion and abortion practice in India.

The Abortion Assessment Project India (AAP-I) has evolved precisely with this concern and a wide range of studies are being undertaken by a number of institutions and researchers across the length and breadth of the country. The project has five components:

I. Overview paper on policy related issues, series of working papers based on existing data / research and workshops to pool existing knowledge and information in order to feed into this project.

II. Multicentric facility survey in six states focusing on the numerous dimensions of provision of abortion services in the public and private sectors.

III. Eight qualitative studies on specific issues to compliment the multicentric studies. These would attempt to understand the abortion and related issues from the women's perspective.

IV. Household studies to estimate incidence of abortion in two states in India.

V. Dissemination of information and literature widely and development of an advocacy strategy

This five-pronged approach will, hopefully, capture the complex situation as it is obtained on the ground and also give policy makers, administrators and medical professionals' valuable insights into abortion care and what are the areas for public policy interventions and advocacy.

The present publication is a report of the findings of one of the two household based studies conducted under AAP-I. in Maharashtra. The main objective of the survey was to study pregnancy outcome analytically in the state with a focus on abortion incidence, care received and costs incurred. The study aims at providing inputs to society at large and to different stake holders including policy makers to facilitate women's access to safe, legal and affordable abortion care services.

This publication has been supported from project grants from Rockefeller Foundation U.S.A. and The Ford Foundation, New Delhi. We acknowledge this support gratefully.

We look forward to comments and feed-back which may be sent to cehat@vsnl.com. Information on this project can be obtained by writing to us or accessing it from the website www.cehat.org.

Ravi Duggal
Coordinator, CEHAT

10th December 2004

CONTENTS

LIST OF TABLES i
LIST OF FIGURES vi
ABBREVIATIONS vii
Acknowledgement viii
Executive Summary x

CHAPTER 1 INTRODUCTION
1.1 The political economy of abortion 1
1.2 Abortion in the changing scenario 3
1.3 Trends in abortion research 5
1.4 Estimates of abortion rates 6
1.5 Abortion morbidity 8
1.6 Management of abortion and post abortion care 9
1.7 Cost and expenditure on abortions 10
1.8 Background of the survey 13

CHAPTER 2 STUDY DESIGN AND METHODOLOGY
2.1 Sample design 17
2.2 Tools of data collection 20
2.3 Field researchers and their training 23
2.4 Pilot test 24
2.5 Fieldwork implementation 25
2.6 Data quality control 28
2.7 Problems encountered in field 29
2.8 Methodological issues 30
2.9 Ethical conduct of the study: Procedures, issues and concerns 32
2.10 Sample implementation 36
2.11 Data coding, entry, validation and analysis 39
2.12 Limitations of the study 40

CHAPTER 3 PROFILE OF SAMPLE POPULATION
3.1 Introduction 41
3.2 Age and sex distribution of household population 41
3.3 Marital status of household population 44
3.4 Educational attainment of household population 47
3.5 Background characteristics of heads of households 48
3.6 Housing characteristics 50
3.7 Standard of living 54
3.8 Profile of women research participants 57
3.9 Profile of study area 61

CHAPTER 4 PREGNANCY OUTCOME
4.1 Introduction 65
4.2 Reported level of pregnancy outcome 65
4.3 Reasons for induced abortions 79
4.4 Sex determination tests 81
4.5 Conclusions 84

CHAPTER 5 REPORTED POST-ABORTION PROBLEMS AND TREATMENT
5.1 Introduction 85
5.2 Overall reported post-abortion problem 85
5.3 Differentials of post-abortion problem 86
5.4 Treatment sought for post-abortion problem 89
5.5 Conclusions 90

CHAPTER 6 ISSUES OF ACCESS AND CARE
6.1 Introduction 91
6.2 Determinants of access 91
6.3 Medical care and its dimensions 95
6.4 Sex identification tests 100
6.5 Family support after abortion 102
6.6 Role of family in decision making 106
6.7 Conclusions 109

CHAPTER 7 COST OF ABORTION SERVICES
7.1 Introduction 111
7.2 Overall costs 111
7.3 Components of costs 114
7.4 Differentials of abortion costs 116
7.5 Sex selective tests and sex selective abortions 123
7.6 Conclusions 124

CHAPTER 8 ADVOCACY ISSUES 125

ANNEXURES

I	Names of people associated with the study	i
II	Estimating sample size	iii
III	Sampling of rural PSU	iv
IV	Drawing household from rural sample	vi
V	Sampling of urban PSU	vii
VI	Drawing household from urban sample	ix
VII-A	Reported pregnancy outcome: summary chart	x
VII-B	Self - assessment	xi
VII-C	Community's response to the community meetings	xi
VIII	Dating chart for pregnancy histories	xii
IX	Certification by Institutional Ethics Committee	xiv
X	Per cent distribution of the household population age 6 and above by schooling and level of education	xv
XI	Standard of living index	xvii
XII	Per cent distribution of ever-married women age 15-54 by level of education	xviii
XIII	Calculation of village weight	xix
XIV	Estimate of underreporting of sex selective abortions for the period 1996-2000	xx
XV	Estimates of sampling errors	xxii

Survey Instruments

I	Area profile recorder	i
II	Household interview schedule	xiii
III	Woman's interview schedule	xxix

LIST OF TABLES

Table 1.1 Basic demographic indicators for Maharashtra and India 15

Table 2.1 Sample results for households and ever-married women age 15 –54 by residence, 2001- 02 36

Table 2.2 Type of consent given by research participants for the household interview schedule, 2001- 02 38

Table 2.3 Type of consent given by women research participants for the women interview schedule, 2001- 02 39

Table 3.1 Per cent distribution of the household population by age, according to residence and sex, 2001-02. 42

Table 3.2 Single-year age per cent distribution of household population by sex, 2001-02 43

Table 3.3 Sex of the household population with the sex ratio, according to residence, 2001-02. 44

Table 3.4 Sex ratio of 0-6 year old population from census and representative sample surveys 44

Table 3.5 Per cent distribution of the household population age 6 and above by marital status, according to age, residence, and sex, 2001-02 45

Table 3.6 Per cent distribution of households by selected characteristics of the household head and household size, according to residence, 2001- 02 49

Table 3.7 Per cent distribution of households by basic amenities, according to residence, 2001-02 53

Table 3.8 Percentage distribution of household by ownership of house, agricultural land and livestock, 2001-02 54

Table 3.9 Percentage distribution of households by type of ownership of land, according to residence, 2001-02 55

Table 3.10 Percentage distribution of households owning selected durable goods and type of kitchenware and the standard of living index, according to residence, 2001-02 56

Table 3.11 Per cent distribution of ever-married women age 15-54 by selected background characteristics, according to residence, 2001-02 59

Table 3.12 Percentage distribution of women's age at marriage by current age and residence, 2001-02 60

Table 3.13 Percentage distribution of residents that have selected facilities and services, 2001-02 62

Table 3.14 Per cent distribution of PSUs with availability of water and sanitation facilities, 2001-02 63

Table 4.1 Ratios and rates of types of reported pregnancy outcome according to residence, 1976- 95 66

Table 4.2 Distribution of all pregnancy outcome ratios and rates according to residence, 1996-2000 66

Table 4.3 Abortion rates by period and age at survey (both spontaneous and induced), 1976-2000 69

Table 4.4 Per cent distribution of pregnancy outcome by parity for ever-married women by place of residence, 1976-2000 70

Table 4.5 Distribution of pregnancy outcome of ever-married women by selected characteristics, 1976-2000 71

Table 4.6 Proportion of ever married women reporting atleast one stillbirth, one spontaneous abortion and one induced abortion, by selected demographic variables, 1976-2000 73

Table 4.7 Percentage distributions of spontaneous abortions, by length of gestation, 1996-2000 74

Table 4.8 Percentage distributions of induced abortions, by length of gestation, 1996-2000 74

Table 4.9 Percentage of reported pregnancies terminating in spontaneous abortion, by selected characteristics of women, 1976-2000 75

Table 4.10 Induced abortion rate, by selected demographic variable, 1976-2000 76

Table 4.11 Per cent distribution of $(i+1)^{th}$ outcome by nature of outcome according to the nature of i^{th} outcome 78

Table 4.12 Percentage distribution of reason for induced abortion by selected demographic variable, 1996-2000 80

Table 4.13 Per cent distribution of all pregnancies using ultrasound by place of residence and SLI, 1986-2000 81

Table 4.14 Rate of sex determination tests per 100 ever-married women, 1976-2000 83

Table 5.1 Per cent distribution of post abortion reported symptoms by time period, 1996-2000 86

Table 5.2 Mean prevalence of post-abortion problem by selected characteristic of women, 1996-2000 87

Table 5.3 Percentage distribution[1] of type of abortion problem by selected characteristic of women, 1996-2000 88

Table 5.4 Percentage distribution of post-abortion problem by treatment seeking behaviour by selected characteristic of women, 1996-2000 89

Table 5.5 Duration of treatment in days taken for post-abortion problem by selected characteristic of women, 1996-2000 90

Table 6.1 Mean and median distances (in km) to provider by type of residence, 1996-2000 91

Table 6.2 Percentage distributions of abortions by type of provider accessed, 1996-2000 92

Table 6.3 Percentage distributions of abortions by type of provider accessed and type of residence, 1996-2000 93

Table 6.4 Percentage distributions of abortions by type of provider accessed and SLI, 1996-2000 93

Table 6.5 Percentage distributions of providers accessed by reasons for choice, 1996-2000 94

Table 6.6 Percentage distribution of abortions by type of treatment received, 1996-2000 95

Table 6.7 Percentage distribution of abortions by serial number of providers, 1996-2000 96

Table 6.8 Percentage distribution of treatment received by serial number of provider, 1996-2000 96

Table 6.9 Percentage distribution of type of treatment received by the type of provider, 1996-2000 97

Table 6.10 Percentage distribution of type of treatment received by SLI, 1996-2000 98

Table 6.11 Mean period of stay (in days) by serial number of provider, 1996-2000 98

Table 6.12 Percentage distribution of induced abortions by aspects of care, 1996-2000 99

Table 6.13 Percentage distribution of induced abortions by offering of contraceptive advice, 1996-2000 100

Table 6.14 Percentage distribution of time taken to reach HCF carrying out sex identification tests, 1996-2001 101

Table 6.15 Percentage distribution of sex identification tests, 1996-2001 101

Table 6.16 Per cent distribution of abortions by amount of rest received after an abortion by selected characteristic, 1996-2000 102

Table 6.17 Per cent distribution of abortions which received care by members of the family who shared the workload after abortion by selected characteristic, 1996-2000 104

Table 6.18 Percentage distribution of abortions by cause of not getting rest after abortion by selected characteristic, 1996-2000 105

Table 6.19 Per cent distribution of abortions by members who participated in the decision of undergoing induced abortion by selected characteristic, 1996-2000 107

Table 6.20 Per cent distribution of sex identification tests by members who participated in the decision of undergoing the sex identification test by selected characteristic, 1996-2001 108

Table 7.1 Average cost in rupees of induced and spontaneous abortions (Rs. per abortion), 1996-2002 112

Table 7.2 Per cent distribution of induced and spontaneous abortions by range of costs, 1996-2000 112

Table 7.3 Per cent induced abortion costs by type of provider, 1996-2000 113

Table 7.4 Per cent induced abortion costs by length of gestation, 1996-2000 113

Table 7.5 Per cent induced abortion costs by type of intervention, 1996-2000 114

Table 7.6 Per cent distribution of components of abortion expenditure and mean cost of component (Rs. per abortion), 1996-2000 114

Table 7.7 Mean cost of abortion expenditure per component, 1996-2000 (Rs. per component) 115

Table 7.8 Mean and median cost of abortion expenditure by type of provider 1996-2000 (Rs. per induced abortion) 116

Table 7.9 Mean and median cost of abortions across socio-geographic regions, 1996-2000, (Rs. per abortion) 117

Table 7.10 Mean and median costs of abortions by social groups (Rs. per abortion), 1996-2000 117

Table 7.11 Mean and median costs of abortions by type of provider (Rs. per abortion), 1996-2000 118

Table 7.12 Mean and median costs of abortions by standard of living categories (Rs. per abortion), 1996-2000 119

Table 7.13 Mean and median costs of abortions by woman's occupation, 1996-2000, (Rs. per abortion) 120

Table 7.14 Mean and median costs of abortions by current age and age at Abortion (Rs. per abortion), 1996-2000 121

Table 7.15 Mean and median costs of abortions by length of gestation (Rs. per abortion), 1996-2000 121

Table 7.16 Mean and median costs of abortions by type of intervention (Rs. per abortion), 1996-2000 122

Table 7.17 Mean and median costs of abortions by source of financing (Rs. per abortion), 1996-2000 123

LIST OF FIGURE

Figure 3.1 Population pyramid, 2001-02 42

Figure 3.2 Per cent distribution of the household population age 6 and above by literacy and level of education, according to age, sex, 2001-02 47

Figure 3.3 Age distribution of ever-married women by residence, 2001-02 57

Figure 4.1 Trends in abortion according to residence 67

Figure 4.2 Rate of different types of pregnancy outcomes per 1000 pregnancy outcomes for five year prior to survey 68

Figure 4.3 Rate of pregnancy loss in Maharashtra: A comparison 70

Figure 4.4 Per cent distribution of (i+1)th outcome by nature of outcome according to the nature of ith outcome, 1976-2000 79

Figure 4.5 Reasons stated for inducing abortion, 1976-2000 80

Figure 4.6 Rate of sex determination test per 100 live birth, 1976-2000 82

ABBREVIATIONS

AAPI:	Abortion Assessment Project - India
APR:	Area Profile Recorder
ANM:	Auxiliary Nurse Midwife
CEB:	Census Enumeration Blocks
CEHAT:	Center for Enquiry into Health and Allied Themes
CHW:	Community Health Worker
CDR:	Crude Death Rate
D&C:	Dilatation and Curettage
DPP:	Dominant Peasant Caste
HCF:	Health Care Facility
HHD-IS:	Household Interview Schedule
IA:	Induced Abortions
IMR:	Infant Mortality Rate
IUD:	Intra Uterine Device
LOG:	Length of Gestation
LB:	Live Birth
MTP:	Medical Termination of Pregnancy
MPW:	Multi Purpose Worker
NFHS:	National Family Health Survey
OBC:	Other Backward Caste
PPS:	Population Proportionate to Size
PNDT:	Pre Natal Diagnostic Techniques
PHC:	Primary Health Center
PSU:	Primary Sampling Units
RCH:	Reproductive and Child Health
SC:	Scheduled Caste
ST:	Scheduled Tribes
SDT:	Sex Determination Test
SSA:	Sex Selection Abortions
SA:	Spontaneous Abortions
SLI:	Standard of Living Index
SB:	Still Birth
TFR:	Total Fertility Rate
WS-IS:	Woman's Interview Schedule

Acknowledgements

This study and report were made possible by the hard work, dedication, and contribution from numerous individuals over the past few years.

We thank individually all the research participants who agreed to give interviews and provided us with the required information without hesitation. We are grateful to them for the hospitality they bestowed upon us and spent their time and responded to our questionnaires with patience and with no expectation from us. The study would not have been possible without their active participation and co-operation.

We are grateful to Dr. Sunita Bandewar, who was the project-in-charge of this study, for her overall guidance and support during the entire study. During the later phase of the study, she was with the Joint Centre for Bioethics, University of Toronto, Canada, and hence could not be with us till the end. Her contribution to the study is sincerely acknowledged.

We gratefully acknowledge Dr. T.K. Roy, Director of International Institute of Population Sciences (IIPS) and his colleagues at IIPS for their assistance in the early phase of the study. Special thanks are due to Dr. Madhukar Pai for his assistance during the sample selection phase. Successful completion of this project would not have been possible without the technical advice of Dr. Purushottam M. Kulkarni and Dr. Sanjeevani Mulay at critical stages of the study. We appreciate and acknowledge their interest and assistance to the study. We are also grateful to Dr. Mukta Umaraji, gyneacologist, who helped us in framing questions for collecting data on abortion morbidity.

We would like to acknowledge and specially thank the members of the Technical Advisory Committee, and the Ethics Consultative Group of the Abortion Assessment Project – India, and the Peer Review Committee and the Institutional Ethics Committee of CEHAT for their constant support and invaluable inputs.

Our sincere thanks to the Government officials, who facilitated our access to census maps which was of great importance in our study. In that, Mr J K Banthia, the Registrar General and Census Commissioner, India, Mr Samir Kumar Biswas, the Director General, Directorate of Census Operations, Maharashtra need a special mention. A survey of this magnitude would not have been possible without the help of officials of the Family Welfare Bureau, Pune and Zilla Parishads of all the districts for their cooperation in providing accommodation at their rest houses for our field researchers. We are also thankful to all people and officials at the Panchayat offices, schools, anganwadi centres and other people in the study area, who extended their full cooperation in providing accommodation and facilitating data collection. Our sincere thanks are due to all of them. Thanks are due to Health and Family Welfare Training Centre, Aundh, for providing their premises and other facilities for conducting the month long training programme for field researchers for the study.

We greatly appreciate the efforts of Dr. Sudershan Iyengar, Dr. Syed Unissa, Dr. S. Krishnamoorthy and Dr. Anant Phadke who went through the draft report without losing their exactitude and patience and providing insightful comments, which have undoubtedly strengthened our work.

We extend our sincere thanks to Dr. Asharaf for providing his expert assistance in making available the census data files in user friendly data management computer format, which made it possible for us to work on them for further processing. We are also grateful to our team members Ms. Madhuri Sumant and Ms. Priti Bhogale for their valuable support, especially during the phase of data collection. We gratefully acknowledge the cooperation extended to us by Mr. Ravi Mandekar, Mr. Shailesh Dikhale and Mr. Dattatray Taras for their help during the field work phase. We also are thankful to our administration and finance units of CEHAT. We are also grateful to all our other colleagues at CEHAT for their support in various capacities.

Special thanks go to Ms. Kanta Palsane and Mr. Amulya Nidhi for helping us finalise the questionnaires in Hindi. Mr. Madhav Despande of Tulip software and his colleagues deserve acknowledgement for their immense help in the data processing operation. Special credit goes to Mr. Shirish Ghate for the art work for the cover page of this publication, which has enhanced its presentation.

We thank Dr. Padma Prakash for her assistance in the language editing of this report and Ms. Margaret Rodrigues for timely publication of this volume.

We would like to thank our resource persons for imparting skill to our field researchers during their training. This acknowledgement is incomplete without expressing appreciation for the hard work put in by the field researchers in collecting data and subsequent coding for the study. All those who were involved directly in the survey are listed in Annexure I.

Finally, we thank The Ford Foundation and the Rockefeller Foundation for their generous grant, which allowed us to conduct this study.

We must add that although we greatly benefited from the advice, help and suggestions received from all those mentioned above, the errors and omissions in this report are our own.

Shelley Saha
Ravi Duggal
Manasee Mishra
Sugandha More
Bhagyashree Khaire

Executive Summary

Objective and methodology

This community-based survey on abortion incidence, care and cost was part of the Abortion Assessment Project – India (AAP-I) studies conducted on various aspects of abortion in 18 states of the country. The main objective of the survey was to study pregnancy outcome analytically with a focus on abortions in Maharashtra. The survey collected background information on a variety of socio-economic characteristics of the population in Maharashtra. It collected data in details on service provider used for pregnancy loss, post- abortion problems, care and cost associated with pregnancy loss from 1996 to 2000.

A state representative sample of 5712 ever-married women aged 15-54 from 5405 households from all districts of the state was interviewed. The sample was selected using a self-weighing systematic, multi-stage stratified sampling procedure. The data was collected between September 2001 and March 2002. The findings of the survey have been disaggregated for rural, urban and Mumbai region and also for the state as a whole. Separate protocols were used to collect household level information and individual information from eligible women.

Profile of sample

Nearly 37 per cent of the population covered in the survey resided in urban areas. Around 32 per cent of the population in the state was less than 15 years of age and 10 per cent of the population over 60 years of age. The sex ratio of the state was 976 females per 1000 males with the ratio being higher in rural areas (979) than in urban areas (970). At age 15-19, the proportions ever married were only 1 per cent for males and 30 per cent for females. By age 25-29, ninety-five per cent of women were married in contrast to 68 per cent of males in this age group. Overall, the data show that women in Maharashtra marry at much younger age than men, and that both men and women marry at younger ages in rural areas than in urban areas. The gender and rural-urban inequities in educational attainment continue to be sharp despite a much higher school attendance rate among the younger age groups. Overall “no schooling” is twice higher in rural areas and amongst women, and in both categories the gap got wider for higher levels of educational attainment.

A relatively larger proportion of the heads of the households was between 30 and 59 years. A large majority of heads of households was married. Eighty four per cent of the household heads were Hindu, 8 per cent Muslim, 5 per cent Buddhist and the rest 3 per cent were from other religions. The mean household size was 5.02 persons, 5.12 in rural areas and 4.85 in urban areas. Eighty eight per cent of households in the state lived in houses with three or more persons per room. About half (49.5%) of the households did not own land, joint or otherwise. About half (47.4%) of the total sampled households fell into ‘medium’ category as regards the SLI (Standard of Living), scores. Of the rest, about one-quarter each fell into ‘low’ and ‘high’ SLI categories. In case of urban population, a little more than two-fifths each belonged to ‘medium’ and ‘high’ SLI categories; while in case of rural areas comparatively a much higher proportion of households (35.9%) were in the ‘low’ SLI.

Rates of pregnancy loss

The mean number of pregnancy outcomes was higher among rural women (3.4) than among urban women (3.0). There was a negative relationship between the level of education of mother and the number of pregnancy outcomes. Women who never attended school on an average had 3.75 pregnancy outcomes, in women with less than seven years of schooling it decreased to 3.31 and among women with more than 12 years of schooling it further decreased to 2.99. The incidence of induced abortion was more than three times higher in urban areas than rural areas and is much higher in Mumbai. The mean number of induced abortions is 16 times higher among women from the high SLI group than of women from the low SLI group.

In rural areas, 4 per cent women had experienced at least one stillbirth as compared to 2.7 per cent in urban areas. In case of spontaneous abortion, 9.5 per cent of women from rural areas experienced spontaneous abortion as compared to 11.7 per cent of women from urban areas. The corresponding figure for induced abortion was 3.7 per cent for rural women and 11.1 per cent for urban women.

The rate of induced abortion for the period 1976-1995 was 20.0 per 1000 reported pregnancy outcomes and the ratio per 1000 live birth was 21.7. For 1996-2000, the rate of induced abortion was more than double the earlier period at 45.4 per 1000 reported pregnancy outcomes and the ratio per 1000 live births was 50.7. Both the ratio and the rate of spontaneous abortion was found higher in urban areas as compared to rural areas for both the time periods.

The per cent of pregnancies ending in induced abortion increased with the rising order of pregnancy. In rural areas the rise in percentage of induced abortion from first pregnancy to second was 1.3 from 0.4 whereas in urban areas the rise was 4.9 from 1.0. More than 14 per cent of spontaneous abortion from rural areas occurred after 20 weeks whereas in urban areas, it was around 8 per cent. The rate of spontaneous abortion was higher when the interval from previous termination to next conception is short. In the case of induced abortion, 78 per cent of the pregnancies were terminated within 12 weeks.

For the period 1976-2000 about 25 per cent of the abortions that were terminated were within the framework of the MTP Act. Pregnancies terminated due to economic reasons were more than eight times higher in urban areas than rural areas during 1996-2000. While reported sex-selective abortion was only four per cent of the total pregnancies terminated between 1976 and 1995, it more than tripled to about 12 per cent for the period 1996-2000. The rate of reported sex determination test per 100 live births increased from 0.2 in 1976-1980 to 2.4 in 1996-2000 period.

Problems associated with abortion

Post-abortion problems were marginally more in case of indused abortion than in case of spontaneous abortions. Post abortion reported morbidity in case of spontaneous abortion is 1.7 times higher in case of rural areas as compared to urban areas and more than 2 times higher when compared with Mumbai.

Many abortions, both induced and spontaneous, in rural areas resulted in excessive bleeding. Problems due to early infections were almost twice higher among spontaneous abortions from rural areas than urban areas. As far as early infections are concerned, for both types of abortions, women from low SLI experienced twice more morbidity than women from higher SLI.

Issues of access and care

The mean distance traveled by women for seeking care for spontaneous abortion was 9.1 km as against 11.8 km for induced abortion. Both the mean and median distances of the private facilities accessed were lower than those for public facilities in rural as well as urban settings. The services of the private sector were sought for 62.3 per cent of the spontaneous abortions and 79.3 per cent of induced abortions. The public sector services were used for 15.6 and 17.9 per cent respectively for spontaneous and induced abortions. A higher percentage of women from the low SLI access the public sector than do women belonging to the other two SLI groups. Among the host of reasons cited for choosing private health care facilities, the absence of a public health care facility nearby and the lack of attention received at public health care facilities were the prime ones. The reasons most often cited for choosing a public health care facility for induced abortion related services, were free treatment offered and inability to pay for services elsewhere.

Consent was taken from spouse or relative in an overwhelming 87 per cent of induced abortions. Both public and private providers largely seek such consent before undertaking the abortion. About 50 per cent of the cases of induced abortion were asked to come for follow up visits. About half the women were not offered contraceptive advice following abortion.

Data reveal that overall, more than 35 per cent of women for induced abortion and 40 per cent for spontaneous abortion had not got any rest after the event. In both types of abortion, women who were from the lower SLI received much less rest than women from middle and higher category. Generally, due to non-availability of help (in 79% and 69% of cases of induced and spontaneous abortions, respectively) women had not been able to take any rest after an abortion.

The husband was usually involved in taking the final decision of terminating a pregnancy. In 48 per cent of induced abortions relatives from in-laws and in 29 per cent of the cases relatives from the natal family took part in the decision of terminating the pregnancy. In 5 per cent of abortions, the woman herself had not participated in the decision making process.

Cost of abortion services

The average out-of-pocket cost per abortion was Rs. 1415.4, being Rs. 1746.5 for induced abortions and Rs. 1113.7 for spontaneous abortions. The average cost per abortion to Mumbai women is much higher at Rs. 2760 per abortion than other areas. Otherwise there were only marginal rural urban differentials in out-of-pocket expenditures on abortion. For induced abortion, between public and private sector the overall cost variation was over eleven times, but for medical care costs like hospital cost it was much higher in the private sector by as much as 20 times. Medicine costs were higher in the private sector by over nine times. In the public sector main cost component for induced abortions was travel.

Introduction And Methodology

CHAPTER 1

INTRODUCTION

Over thirty years have passed since the Medical Termination of Pregnancy (MTP) Act – 1971 legalised abortion in India. This, one would understand is long enough a period to realise the objectives of the legislation. Unfortunately, the scenario for abortion care and access has not changed very much. The only difference is that before 1971 all abortions, except those done to save the life of the mother, were criminalized, and since then abortions are legal. Despite the legal provision, certified and safe abortion service providers remain in small number.

However, access to abortion services per se is not difficult in the remotest areas of the country. The assortment of providers of abortion services include *dais* and herbalists at one end of the spectrum to government paramedics like auxiliary nurse midwives, pharmacists and other health workers, unqualified private providers, qualified but uncertified doctors, trained and certified providers and gynaecologists at the other end. With certification available under the Act to all allopathic doctors who meet the requirements any number can be certified, yet an overwhelmingly large number of providers are non-registered and/or unsafe providers. Why is it so?

1.1 THE POLITICAL ECONOMY OF ABORTION

The answer lies in the political economy of modern health care and specifically abortion care. Traditionally birth attendance and abortion were very much in the domain of the local *dai* and/or an equivalent practitioner like a herbalist or often even a local abortionist. Usually a woman, this provider was part of the *jajmani*[1] relations and provided services to all who needed it within the community she lived in. While not much has been written about abortions in pre-colonial India there is also no evidence of abortion being illegal in India, notwithstanding Kautilya's *Arthashastra*, which specified severe punishment for aborting a slave woman.[2] Infact the code of ethics as per *Charaka Samhita* does not mention abortion, unlike the Hippocratic oath ("*I will not give to a woman a pessary to produce abortion"*).[3] The ban came into effect only with the Indian Medical Service being established in 1763 (initially as the Bengal Medical Service) under British hegemony.[4] This was codified in the Indian Penal Code of 1860. With the establishment of modern medical education and practice came values as understood under western medical practice and this included criminalisation of existing abortion which continued in the code of ethics of the Indian Medical Council established in 1956 (*I will maintain the utmost respect for human life from the time of conception*). This medicalisation of abortion completely changed the political economy of abortion, threatening the traditional dispensation. However given the fact that regulation of medical practice was grossly wanting, abortion services continued to thrive even during this period of criminalisation.

---

[1]The *jajmani* system was a set of economic interrelations across caste groups in the local community which had social sanction and linked to it mandatory social obligations. This also kept intact the economic basis of the caste system. Today it is largely destroyed but may be found in pockets in most states, especially in the Hindi heartland.

[2] Jaggi, O.P. (1981): *Indian System of Medicine*, Atma ram and Sons, Delhi.

[3] Jaggi, O.P. (1980): *Western Medicine in India – Social Impact*, Atma Ram and Sons, Delhi.

[4] Crawford, D.G. (1914): *A History of Indian Medical Service* 1600-1913, W. Thacker and Co., Calcutta.

The Indian government adopted abortion as one more method of fertility control and legalised abortion under the Medical Termination of Pregnancy Act, 1971 (amended in 2002). This formal legalisation provided the medical profession monopoly over abortion provision and was a further step in the medicalisation of abortion. Legal abortion services began to expand but it did not significantly threaten the traditional abortion providers. On the contrary, abortion was seen as a growing business and many unqualified and/or untrained medical practitioners entered the fray. Since regulation of medical practice was weak, this put a dampener on expansion of legal abortion services.

While the State had promulgated the MTP Act to make abortion legal it did not become a leading player in abortion provision, unlike family planning services like sterilisations, IUDs and other contraceptives. Thus, abortion services remained predominantly in the private domain with the State playing a subtle role in keeping abortion within the family planning context by providing subsidies to private abortion providers if they linked abortion provision with sterilisation or IUD.[5] In public health facilities the State pushed hard acceptance of sterilisation and IUDs for abortion seekers and this had the adverse consequence of women turning away from public health facilities for abortions. This unmet demand for abortion services opened further the floodgates for all sorts of private providers. So in the 1980s there were huge advertising campaigns by private providers selling abortion services "for Rs. 70 only". This was a clear message by the State that abortion could be practised freely irrespective of the restrictions within the MTP Act. This attitude of the State and its failure to play a lead role in provision of abortion services strengthened the existing political economy of abortion practice, which added to the numbers of illegal and unsafe abortion providers.[6] In fact, in this process the traditional abortion providers have got marginalized. Also with sterilisation having wide acceptance in rural areas the demand for abortions also got partially affected, and in this process the traditional abortion providers, as usually happens when a new system or dispensation penetrates, became the first casualty. They only survive in remote pockets, *adivasi* areas and other underserved areas. What is of concern in terms of safe abortion services is the growing number of non-traditional and unqualified practitioners of abortion services on one hand and the absolute lack of ethics and self-regulation in medical and abortion practice amongst qualified professionals and their associations.

Today sex-selection and sex-determination possibilities have catapulted the abortion business to newer heights and all sorts of unscrupulous players have entered the business. Sharp decline in juvenile sex ratios has awakened the State into putting in place some vigilance and regulation. While the Pre Natal Diagnostic Techniques (PNDT) Act, 1994 has been strengthened to control sex selection, the MTP Act has also been amended to make the process of registration and certification simpler and less bureaucratic with the hope that registration and hence proportion of legal abortions would increase substantially.

---

[5] Organisations like FPAI and many other NGOs get grants for conducting sterilisations and inserting IUDs, including incentive money, and often this is linked to abortion services, which are provided free to acceptors of contraception. For instance in the case of FPAI their records reveal that 97% of abortions in 2001-02 in Delhi were dovetailed with sterilisations or IUDs. (Cited in *Cost and Finance in Abortion* by Ramamani Sundar - Abortion Assessment Project - India, CEHAT and Health Watch, Mumbai).

[6] The first major study on illegal abortions by ICMR showed that 68.5% of all induced abortions were illegal. This study conducted in 5 states covering 44731 pregnancy outcomes recorded an induced abortion rate of 21 per 1000 live births and an abortion ratio of 1.98% of all pregnancy outcomes. (Cited in *Illegal Abortions in Rural Areas*, ICMR, 1989, New Delhi.)

1.2 ABORTION IN THE CHANGING SCENARIO

The Government of India's decision in the post Cairo period (1996) to introduce a more comprehensive Reproductive and Child Health (RCH) program in place of vertical safe motherhood, child survival and family planning programs gave women's health advocates an opportunity to re-establish the importance of a holistic approach. This has created a favourable climate in the country to examine the issue in its different dimensions and work towards making abortion services safe. In the last six years various donors have also been working with the Government of India and various State Governments to develop district-specific plans for Reproductive and Child Health Programmes. These efforts have been noteworthy and administrators are trying to grapple with unexplored public policy issues. While RCH-1 is now getting over and some assessments and learning have been documented, RCH-2 is being planned and wide consultations are taking place to get on board views, ideas and suggestions of various stakeholders. It will be many years before this will bear fruit, but given the present public policy climate in the country, the trend appears positive.

While the climate seems to be favourable to initiate debate on safe abortion among key stakeholders, lack of reliable information, wide regional variations, rural-urban differences and a thin research base, make it difficult for policy makers, administrators and women's health advocates to develop strategic interventions. There is little dialogue between different stakeholders and it is not uncommon to see registered service providers, unregistered / untrained practitioners, women's health advocates, population control lobby, public health advocates and others working at cross purposes. While the moderate spectrum in all the above constituencies are open to dialogue and change, it is indeed a big challenge to bring them together in a non-confrontational forum.

Abortion has been a sensitive issue in most countries of the world, and has recently received international attention as a public health issue. In India MTP is permitted under specific conditions. The MTP Act of 1971 and the MTP Rules and Regulations of 1975 lay down the legal and medical framework for abortion services. Despite the legal status of abortion, it is estimated that over 4.5 million abortions are performed each year by providers or in institutions that are not registered.[7] And often these are untrained persons conducting abortions in unhygienic conditions.[8] Public discussion in India on abortion related morbidity and mortality is practically absent. Despite an intensive national campaign for safe motherhood, the issue of abortion has not captured public attention.

In the last decade women's health advocates have tried to draw attention of the policy makers and administrators to a range of issues related to abortion in order to improve the availability, safety and access of services, including:

- Abortion perceived as an extension of the Government's population stabilisation programme;
- Tendency to use abortion as yet another means of family planning;
- Growing trend in many parts of the country towards sex selective abortion;
- Inadequate safe abortion facilities within reach of the majority of poor women in rural and urban areas;

---

[7] Johnston, H.B. (2002): *Abortion Practice in India: A Review of Literature*, Working paper, Abortion Assessment Project – India, CEHAT and Health Watch, Mumbai.

[8] Khan, M. E., Rajagopal, S., Barge S., and Kumar, N. (1998): Situation analysis of Medical Termination of Pregnancy (MTP) services in Gujarat, Maharashtra, Tamil Nadu and Uttar Pradesh, Centre for Operation Research and Training (CORT), Baroda. Paper presented at Global Meeting on Post-abortion Care and Operations Research, organised by Population Council, New York, USA, 19-21 January 1998.

- Dearth of medically approved abortion providers and registered facilities and proliferation of unqualified providers;
- Inadequacy of post-abortion family planning counselling and services; and
- Abortion not perceived as a women's health issue among policy makers and service providers.

Recent studies[9] on abortion and related themes conducted in Maharashtra, Gujarat, Uttar Pradesh, Tamil Nadu, Rajasthan and West Bengal by various research organisations, highlighting different facets of the abortion issue suggest that the estimates of abortions that take place and morbidity that follows needs to be looked into in much greater detail.

During a study undertaken by CEHAT, a preparatory survey was conducted in two districts of Maharashtra to define the universe consisting of facilities providing abortion services from which the study sample was to be selected. This showed that there exist about four non-registered abortion care centres/providers for each registered one.[10] This excludes indigenous and non-qualified abortion practitioners. Information on non-certified providers and quacks is not easily available in the country except a few references from small scale community based studies or facility surveys. The extent of involvement of these practitioners may vary from region to region. It is perhaps related to the development status of the region as it implies outreach of health care services, people's attitude towards modern health care services, their capacity to buy such services and also their openness to the outside world.[11]

Community based studies on reproductive health care utilisation patterns have indicated that women's health issues have often been of low priority within the household. Besides, abortion still remains a stigmatised act. Women have identified confidentiality as one of the major quality indicators with regard to abortion care services. Quick return to home after the abortion procedure, availability of abortion care which will not require more than one visit have been other priority indicators of quality of abortion care from women's perspective.[12] Women's lack of access to or less control over family resources and her secondary status in the family add to the severity of the problem of women's access to health care services in general and abortion care in particular.

For improving women's access to safe and legal abortion efforts at two levels are required. One, to develop a mechanism to improve the implementation of the MTP Act for the benefit of women along with efforts to

---

[9] Khan, M. E., Rajagopal, S., Barge S., and Kumar, N. (1998): Situation analysis of Medical Termination of Pregnancy (MTP) services in Gujarat, Maharashtra, Tamil Nadu and Uttar Pradesh, Centre for Operation Research and Training (CORT), Baroda. Paper presented at Global Meeting on Post-abortion Care and Operations Research, organised by Population Council, New York, USA, 19-21 January 1998; Gupte, M., Bandewar, S., and Pisal, H. (1999): Women's perspective on the Quality of General and Reproductive Health Care: Evidence from Rural Maharashtra. Koeing et al. (eds) *Improving Quality of Care in India's Family Welfare Programme: The Challenge Ahead*, New York, Population Council, pp 117-139; Ganatra, B., Hirve, S., Walawalkar, S., et al. (2000): Induced abortions in a rural community in Western Maharashtra: Prevalence and Patterns. Paper presented at a workshop on Reproductive Health in India: New Evidence and Issues, Pune, March; Mathai, S.T. (Unpublished): *A study on prevalence of abortions in Malda, Uttar Dinajpur and Dakshin Dinajpur*, 1999.

[10] Bandewar, S. and Sumant, M. (2002): *Quality of Abortion Care - A Reality*, CEHAT, Pune.

[11] Preliminary data from the Abortion Assessment Project-India shows that for the country as a whole from amongst facilities having formally qualified providers 43% were registered, ranging from 96% in Mizoram to 46% in Kerala and a low of 20% in Orissa - *AAP-India preliminary report*, CEHAT-Healthwatch, 2003.

[12] Gupte, M., Bandewar, S., and Pisal, H. (1999): Women's perspectives on the quality of general and reproductive health care: Evidence from rural Maharashtra. In Koenig, M. and Khan, M.E. (eds), *Improving quality of care in India's Family Welfare programme: The challenge ahead*, New York: The Population Council.

generate discussion to bring changes in the MTP Act so as to make it more friendly to women.[13] Secondly, to work towards changing the socio-cultural fabric in such a way that more and more women are empowered to exercise not only their civil rights but also social rights. In that sense, legislative measures are a means to an end and not an end itself. Taking stock of efforts that have gone into abortion research to date would be able to tell us the gaps in abortion research and the potential for further research, advocacy and action programmes ultimately to progress towards improving women's health status.

1.3 TRENDS IN ABORTION RESEARCH

Most abortion research in India until 1980s was hospital based with a focus on socio-demographic characteristic of women, reasons for undergoing abortion, type of morbidity, cost of abortion care etc. Mainstream research efforts were governed by a perspective viewing MTP as one of the means for the state's goal of population control. And mostly medical doctors, demographers and policy makers conducted this research. A review of the annotated bibliography of abortion studies[14] reveals that most research examined the understanding and calculating incidence patterns in the context of age, socioeconomic background, duration of marriage, pregnancy and contraceptive histories.[15] About 119 studies in India were referred to by WHO (1994)[16] while addressing the global issue of 'unsafe abortion'. These efforts were to understand the magnitude of prevalence of unsafe abortion globally. A glance at these studies indicates that they were not necessarily abortion studies. The events that were most studied in these research studies were maternal deaths and pregnancies. These were perhaps included due to some reference to abortion events. Except 17 community studies, the rest were mostly hospital based studies and some based on secondary sources data/statistics and estimates. The studies which looked at abortions as study events (induced, spontaneous, non-legal, septic, haemorrhages etc.), were all hospital based. A closer look at the 17 community based studies shows the following: (1) most studied events were pregnancies; (2) most are prospective studies; (3) most are based in urban slums and/or rural areas; (4) except one study, recorded abortions are presumed to be non-legal; (5) abortion rates recorded as a proportion of live births vary widely in range, and (6) generally rural based studies seem to have recorded lower rates of abortion compared to those in urban based studies. The latest study recorded here is the one conducted in 1986.

From 1990s abortion research, and in fact most women and health research have experienced a shift in focus in more than one sense. The thrust and the purpose of such research, the underlying philosophy and methodologies employed, are markedly different. Professional rigour introduced by the researchers in combination with their urge to understand the ground realities from women's perspective often challenged the findings of the earlier research and highlighted the shortcomings in their research. The shift from hospital based to community-based research was one of the major changes. A situation analysis of abortion care facilities, understanding women's abortion needs in the larger context of reproductive health care and general health care needs, decision making process involved, quality of abortion care, socio-cultural, legal

---

[13] The MTP Act was recently amended in Dec 2002 (64 of 2002) wherein implementation has been decentralised at the district level, punishment to the woman resorting to services of unregistered provider has been dropped and punishment restricted to the provider and owner of the facility, and medical abortion has been included.

[14] Karkal, M. (1970): *A Bibliography of Abortion Studies in India*, International Institute of Population Studies, Bombay.

[15] Jesani A. and Iyer, A. (1993): Women and Abortion, *Economic and Political Weekly*, Nov 27, pp. 2591-94.

[16] World Health Organisation (1994): *Abortion: A tabulation of available data on the frequency and mortality of unsafe abortion*, 2nd ed. WHO, Division of Family Health, Geneva.

and political context of abortion were the new thrust areas for research. Women here have been at the centre of such research. The shift has also been in terms of employing women sensitive methodologies, using a mix of qualitative and quantitative methods. These brought out a wealth of nuanced insights about the issues going beyond a mere understanding of the profiles of women seeking abortion.

Abortion incidence and related morbidity is one among the less studied topics within abortion research in India. Whatever little work done on abortion mortality and morbidity is mostly through hospital based studies, often as part of the larger studies on gynaecological mortality and morbidity. Hospital based abortion mortality and morbidity studies tell us only a small fraction of the story. Thus a community based household survey becomes crucial to gain better insights into the issue and this is perhaps long overdue. The present study thus is a small effort to fill this gap.

1.4 ESTIMATES OF ABORTION RATES

The present research was intended to arrive at estimates of abortion incidence through community based study. Since this was a community based empirical research focused on the socio-culturally sensitive issue of abortion, we first examined earlier research done world over.

Till date abortion estimates are calculated using the logic used by the Shah Committee, which was appointed to study the abortion situation in India way back in 1966.[17] These estimates at that time were arrived at by a small-scale abortion study that was based on both hospital and community. The Committee assumed that for every 73 live births, 25 abortions took place of which 15 were induced. It was therefore estimated that in a population of 500 million the number of abortions per year would be 6.5 million (2.6 million natural and 3.9 million induced). Since then, the abortion estimates by and large are based on this equation. The determinants/ parameters are population at a given point of time and birth rate. The major constraint seems to be not being able to adjust the estimates to demographic changes, increased use of contraception, changes in age at marriage etc. Thus, in sum, the two major constraints of the prevailing estimates are (1) its inability to take into account the changing trends in indications/reasons for abortion and (2) need to explore its validity at this point of time after about 37 years since its logic was formulated based on then available abortion research. Moreover, the advent of amniocentesis in the mid-1970's to detect genetic abnormalities saw its growing misuse as a technology to determine sex of the fetus. In recent years, amniocentesis was replaced by ultrasound as the primary sex identification technique leading to increased induced abortion.

In the above context, hospital and community based studies, quantitative and qualitative studies together help us strengthen understanding of existing scene. Health research in the last couple of decades has witnessed incidence studies coming of age. Limitations of the hospital-based studies are well documented and recognised. They are not able to capture the large numbers that do not approach the formal health care institutions. Community based studies despite difficulties in conducting them have proved to be more insightful, both as regards understanding the causal relationship and enabling to arrive at better estimates.

---

[17] Government of India (1966): *Report of the Committee to Study the Question of Legalisation of Abortion (Shantilal Shah Committee)*, Ministry of Health and Family Planning, Government of India, New Delhi.

The literature review of community based retrospective surveys conducted to study, fertility trends and/or abortion incidence and related issues show that a range of methodologies has been used for such research.[18] The review brings forth issues related to various aspects of methodology, viz: sampling design, deciding upon the sample size enabling generalisation; under-reporting and methods to deal with it; and formulation of tools of data collection. The methods and approaches to overcome the problems in studying abortion through large-scale community based household surveys of women have evolved over time through lessons from the earlier research studies.

Community based studies are primarily of two types: (a) prospective, and (b) retrospective. They have their weaknesses and strengths. Prospective studies turn out to be more expensive. They are also difficult to conduct compared to retrospective studies. The ethical issues involved in such studies are also grave in nature and difficult to resolve. However, they have advantages, too. For example, prospective studies are better suited to record early losses – during the first six weeks of gestation.[19] Instead, cross-sectional retrospective studies are more likely to be cost-effective as they allow obtaining data on a wide range of aspects, including the trends over time in a single round unlike prospective studies. Retrospective studies have their own limitations. Susceptibility to recall bias is one of the major limitations of this approach. The review of literature indicates that researchers have chosen the latter. Given the strengths and weaknesses of various methods mentioned above, we chose to adopt community based retrospective approach in the present research. The presentation of discussion that follows, therefore, restricts itself to the issues in the context of retrospective community-based studies to arrive at population estimates of abortion incidence.

In a small-scale community based study conducted before 1985 in Tamil Nadu 7 per cent of married women aged 15-45 reported history of induced abortion and the abortion ratio was found to be 9.1 per 100 live birth.[20] The study conducted by ICMR to assess the magnitude of illegal abortion in rural areas found a rate of 13.3 non-legal abortion per 1000 pregnancy outcomes and 6.1 legal abortions per 1000 pregnancy outcomes.[21] A prospective study in a Primary Health Centre (PHC) in West Bengal in 1990, recorded 372 abortions in 300 women within the study period of 15 months.[22] Comparatively a large-scale recently conducted community based abortion incidence study[23] recorded induced abortion ratio of 148 per one thousand live births, which is much less than 204 that could be calculated for the same period as per Shah Committee[24] estimates. A case finding method using multiple sources of information was employed to arrive at the study sample. The constraint of under reporting does not get addressed to entirely, despite the use of multiple sources. Another community based study in West Bengal captured a abortion ratio of 151 per 1000 live birth.[25]

---

[18] Saha, S. (2003): *Estimating Abortion Rate through Community Based Studies- Methodological Issues*, Working Paper, Abortion Assessment Project–India, CEHAT and Health Watch, Mumbai.

[19] Casterline, J.B. (1989): Collecting data on pregnancy loss: A review of evidence from the World Fertility Survey, *Studies in Family Planning*, Vol 20(2), pp. 81-95.

[20] Nair, P.S. and Kurup, K.B. (1985): Factors influencing low performance of legal abortion in India: A community study, *Journal of Family Welfare*, Vol 32 (1), pp. 30-40.

[21] Indian Council of Medical Research (ICMR) (1989): Illegal abortion in rural areas: A task force study, *Report of ICMR,* Indian Council of Medical Research, New Delhi.

[22] Mondal, A.M.D. (1998): Induced Abortions in Rural Society and Need for People's Awareness, *Journal of Obstetrics and Gynaecology*, Vol. 41, pp. 450 – 457.

[23] Ganatra, B., Hirve, S., Walawalkar, S., Garda, L. and Rao, V. N. (2000): Induced abortion in a rural community in Western Maharashtra: Prevalence and patterns. Paper presented at a workshop on Reproductive Health in India: New Evidence and Issues, Pune, March.

[24] The Shah Committee (1966) assumed that for every 73 live births there is 25 abortions and three fifths of these are induced and two-fifths are spontaneous.

[25] Mathai, S.T. (Unpublished): *A study on prevalence of abortions in Malda, Uttar Dinajpur and Dakshin Dinajpur*, 1999.

Another aspect of studies estimating induced abortion is to capture the rate of sex selective abortion. In a qualitative study in rural Maharashtra, 30 of the 67 women interviewed approved of sex selective abortions.[26] It is difficult to capture the exact incidence of sex-selective abortion as PNDT Act had made sex selective abortions illegal. However, a community based study in Maharashtra shows that sex selective abortions after identification of female foetus accounted for 17.6 per cent of all identified abortions among married women.[27]

Besides the above community based studies there are some large-scale fertility surveys like National Family Health Surveys (NFHS) and RCH survey that have estimated percentages of abortion. The NFHS – 1 estimated a pregnancy loss of 1.3 per cent due to induced abortion[28], and it increased to 1.7 per cent in NFHS – 2.[29] Another national level household survey on RCH estimated a pregnancy loss of 1.0 per cent due to induced abortion.[30]

1.5 ABORTION MORBIDITY

Limited data exist on abortion morbidity in India. In South and Southeast Asia, one-third of the women having abortions are believed to experience complications, and more than half of them do not receive hospital treatment.[31] The most frequent complications are incomplete abortion, sepsis, haemorrhage and intra-abdominal injury. Long-term health problems caused by unsafe abortion include: chronic pelvic pain, pelvic inflammatory disease, tubal blockage and secondary infertility. Other possible consequences of unsafe abortion are ectopic pregnancy and an increased risk of spontaneous abortion or premature delivery in subsequent pregnancies.[32]

Community based evidence in India regarding abortion related morbidity is limited. Life threatening complications and subsequent mortality is disproportionately higher amongst rural abortion seekers and women who are non-literate, unmarried or in the adolescent age group.[33] In a community-based cross-sectional study of maternal morbidity among 4000 women in Pondicherry and Tamil Nadu, we see that 93 per cent of women who had spontaneous abortion and 68 per cent of women who had induced abortion reported some morbidity following abortion. Among those women who had spontaneous abortion, 81 per cent reported excessive bleeding, 79 per cent reported abdominal pain and 29 per cent fever. In case of induced abortion, nearly half of the women reported abdominal pain, 42 per cent reported excessive bleeding and 17 per cent fever.[34] In another study in rural Maharashtra, information on induced abortion

---

[26] Gupte, M., Bandewar, S. and Pisal, H. (1997): Abortion needs of women in India – A case-study of rural Maharashtra, *Reproductive Health Matters*, May, Vol 9, pp. 77-86.

[27] Ganatra, B., Hirve, S. and Rao, V.N. (2001): Sex-Selective abortion from a Community-based Study in Western India*, Asia-Pacific Population Journal*, Vol 16(2), pp. 109-124.

[28] International Institute of Population Sciences (1995): *National Family Health Survey- India*, IIPS, Bombay.

[29] International Institute of Population Sciences and MEASURE DHS + ORC Macro, (2000). *National Family and Health Survey 2 - India*, IIPS, Mumbai.

[30] International Institute of Population Sciences (2000): *Reproductive and Child Health Project: Rapid Household Survey- Phase I, India,* IIPS, Mumbai.

[31] Singh, S., Wulf, D, and Jones, H. (1997): Health Professionals Perceptions about Induced Abortions in South Central and Southeast Asia, *International Family Planning Perspective*, Vol 23 (2), pp. 59-67.

[32] World Health Organisation (1997): *Abortion: A Tabulation of Available Information*, 3rd Edition. Geneva.

[33] Ganatra, B. (2001): Abortion research in India: What we Know, and What we Need to Know. In Ramasubban, R. and Jejeebhoy, S.J. (eds.) *Women's Reproductive Health in India*, Rawat Publications.

[34] Srinivasa, D.K., Narayan, K.A., Oumachigui, A., et al. (1997): *Prevalence of Maternal Morbidity in a South Indian Community*, JIPMER, Pondicherry.

morbidity reveals that over two-thirds of the women experienced one or more complications that were severe enough to have affected their routine household work. The most commonly mentioned problem cited was a feeling of weakness and excessive tiredness.[35] Yet another study found an overall complication rate for induced and spontaneous abortions of 48.3 per cent.[36] Bleeding was the most commonly cited complication along with abdominal pain and high fever.

Separating morbidity due to abortion from morbidity due to contraceptives that are simultaneously adopted is particularly difficult, although there is some evidence that abortions with concurrent IUD insertion or sterilisation may have a greater risk of complications than with either procedure performed alone.[37] Complication rates were more common in the case of abortion induced by non-allopathic doctors.[38]

1.6 MANAGEMENT OF ABORTION AND POST ABORTION CARE

Very little is known about the process by which women avail of abortion services. The initial response to a missed period may be an attempt to 'bring on' the delayed period with medicine from a nearby chemist or the local doctor. For most women, trying to induce menstruation is not perceived to be equivalent to an abortion but a way to confirm the pregnancy or to reassure themselves that they are not pregnant. A formal provider is contacted only if these initial attempts do not succeed.[39]

There is hardly any literature available regarding care from the family that a woman gets after she has had an abortion, both natural and intentional. There are some studies that give information on medical care women get after abortion or women who develop complications after abortion. A study from rural Thailand reveals that among all women who had an abortion, median time lost due to the abortion was around 9 days.[40] The findings of a study in a district in Northern India show that some abortion seekers were able to go back to normal life 2-3 days after abortion. Others who mentioned that they had some problems stated that the problems occurred, as the women did not or could not follow the doctor's advice due to their poor socio-economic status.[41] Women do not always obtain satisfactory services from public providers. Insistence on contraceptive adoption and insistence on husbands' signature are many times not acceptable to women.[42] A study of the abortion care seeking process in Tamil Nadu shows that auxiliary nurses play a crucial role in obtaining appropriate services for their clients.[43] The same study showed that concern about potential litigation under the Consumer Protection Act was many a times the reason for refusal of services to all but the safest of abortions at taluka-level hospital. Approved public health care centres were found to lack MTP services, the main reason being lack of trained personnel.[44]

---

[35] Ganatra, B., Hirve, S., Walawalkar, S., et al. (2000). *op.cit*.
[36] Mathai, S.T. *op.cit*.
[37] Ganatra, B. *op.cit*.
[38] Mathai, S.T. *op.cit*.
[39] Ganatra, B. *op.cit*.
[40] Narkavonnakit, T. and Bennett, T. (1981): Health consequences of Induced abortion in rural Northwest Thailand, *Studies in Family Planning*, Vol 12(2), pp. 58-65. The sample consisted of 109 women who had abortions performed by indigenous practitioners.
[41] Parivar Seva Sanstha (1998): Abortion Research: Phase II. Parivar Seva Sanstha, New Delhi.
[42] Gupte, M., Bandewar, S., and Pisal, H. (1996): Women's Role in Decision Making in Abortion: Profiles from rural Maharashtra, Unpublished Paper, CEHAT, Pune.
[43] Ganatra, B. *op.cit*.
[44] Khan, M. E., Rajagopal, S., Barge S., and Kumar, N. *op.cit*.

Majority of abortion related morbidity is preventable provided there is treatment available at all levels of the health care system. The elements of post abortion care services that can be integrated into a comprehensive abortion care programme include: emergency treatment of incomplete abortion and potentially life-threatening complications; abortion contraceptive counseling and services and links to other emergency services.[45] In the Indian context post abortion care mostly consists of post abortion contraceptive acceptance, especially in public abortion care facilities, given India's interest in population control. In most of the places where post abortion contraceptive counseling exists it is mostly inadequate and there is not much scope for informed choice. Other aspects of care like potential complications and how to take care of them, receive little attention.[46]

A review of Indian literature on abortion practice reveal that even if women decides to access health care services for management of her abortion, they have not got appropriate care due to various reasons.[47] Various factors that influence women in choosing a provider or a facility for induced abortion were cost of abortion, confidentiality, referral or recommendations by other, prior personal experience, empathy, concern and counseling from the doctor, sex of the doctor, doctor's experience in conducting abortion, and stay needed at the abortion care facility.[48] [49] [50] A community based study in West Bengal, showed that more than 69 per cent women used private sector facilities for inducing abortion.[51] The same study recorded a significant percentage of women using practitioners from other systems of medicine who are not trained or qualified to induce abortion. Another study in rural Maharashtra found that more than 81 per cent of women went to the private sector for termination of their pregnancies.[52] The same study reveals that over half of all the abortions in the private sector (52.5%) and 45.9 per cent of all abortions took place with providers who were not legally recognised as MTP service providers or were performing the abortion in a place not legally approved for that purpose. Traditional practitioners were used by 2 per cent of married women. A recent study in Madhya Pradesh highlights the disturbing fact of use of potentially unsafe abortion procedures by majority of rural women.[53]

1.7 COST AND EXPENDITURE ON ABORTIONS

Cost of abortion services vary considerably according to various factors such as the number of weeks since conception, the method used, the client's marital status, kind of anaesthesia used, whether it is linked to acceptance of some contraception, whether it is sex-selective abortion, whether any diagnostic tests like pregnancy test, sonography, lab tests, etc. were done, what kind of medications are given, the location of the clinic, whether the provider and/or clinic is registered, whether hospitalisation is required, what kind of competition exists, etc.

---

[45] Johnston, H.B. *op cit*.
[46] Khan, M. E., Rajagopal, S., Barge S., and Kumar, N. *op.cit*.
[47] Johnston, H.B. *op.cit*.
[48] Gupte, M., Bandewar, S., and Pisal, H. (1999). *op.cit.*
[49] Ganatra, B., Hirve, S., Walawalkar, S., et al. (2000). *op.cit*.
[50] Mathai, S.T. *op.cit*.
[51] *ibid*.
[52] Ganatra, B., Hirve, S., Walawalkar, S., et al. (2000). *op.cit*.
[53] Malhotra, A., Nyblade, L., Parasuraman, S., et al. (2003): *Realising Reproductive Choice and Rights: Abortion and Contraception in India*, International Centre for Research on Women.

Globally, in countries that have organised healthcare systems and/or are largely based on social insurance, have standardised rates for abortion services, like most other health services and hence variation is limited. Thus costs and expenditures are well documented. In India such data is not available, except through small studies of providers and household based studies researching utilisation patterns of healthcare. A study conducted in 1996 in rural Maharashtra found the median cost (including medicines and transport) of a first trimester abortion in the public sector was Rs. 412 whereas in the private sector it was Rs. 540.[54] Recently, a multi-centric study of abortion providers in six states attempted to obtain costs from private and public providers of abortion services. In Kerala the costs ranged from an average of Rs.1266 for under 12 weeks to over Rs.5000 for over 20 weeks in the private sector and were free in the public sector.[55] In Haryana in the public sector it ranged from Rs.9 to Rs.80 for under 12 weeks and over 12 weeks respectively, and in the private sector from Rs 300 to Rs. 3000.[56] In Madhya Pradesh the public sector abortion cost was much higher ranging from Rs.209 under 12 weeks of pregnancy to Rs.775 for upto 20 weeks, and in the private sector from Rs.389 under 12 weeks to Rs.1583 for over 20 weeks.[57]

There are a number of other studies in the last few years, which have looked at what clinics are charging or what clients are paying for use of abortion services. CORT conducted studies of providers in rural Uttar Pradesh, Maharashtra, Gujarat and Tamil Nadu and also interviewed few clients to collect information on what was paid to the provider for abortion services and these ranged from Rs. 135 to Rs. 534 (average Rs. 370) for public providers and from Rs. 394 to 649 (average Rs. 497) for private providers. Of this the doctor got 42 per cent and 21per cent was spent on medicines.[58] Another similar study in Maharashtra in 1999 found that the average cost of abortion was Rs.991.[59] And in Uttar Pradesh and Rajasthan in 1998 the average cost to the user was between Rs. 200 and 500 in a government facility, Rs. 700 to 800 in private hospitals and above Rs 1000 in Marie Stopes clinics.[60]

All the above studies indicate that early abortion is available on the average between Rs.500 and Rs.1000 and late abortion averages between Rs.2000 and Rs.3000 per case. The variation depends on the method used with vacuum aspiration during early pregnancy costing much less than other surgical procedures like dilatation and curettage, since latter procedures use general anaesthesia that add to the cost. Manual vacuum aspiration (MVA) use is still very low in India and its larger use could bring down the cost of abortion substantially. Experience in many developing countries of Africa, Asia and Latin America provide clear evidence for a case to expand the use of MVA not only because it is cheap[61] but also because it would encourage early abortion and this in turn would make abortion safer, even if trained paramedics provide such services as is being done in Bangladesh and South Africa.[62]

Another reason for the cost variation could be because of sex-selective abortions. A qualitative study women in Maharashtra showed that while regular abortion cost between Rs.100 and Rs.1200 depending on

[54] Ganatra, B., Hirve, S., Walawalkar, S., et al. (2000). *op.cit*.
[55] Ramanathan, M., Sankara Sarma, P. Krishnakumar, C.S., (2003): *Situational Analysis of MTP Services in Kerala - Provider Perspectives* (draft Report), AMCHSS, Thiruvananthapuram.
[56] Barge, S. et.al, (2003): *Situation Analysis of MTP Facilities in Haryana* (draft report), Society for Operation Research Training, Vadodara.
[57] George, A. (2003): *An Enquiry into Provision of Abortion Services in Madhya Pradesh* (draft report), CHSSS, Hyderabad.
[58] Khan, M. E., Rajagopal, S., Barge S., and Kumar, N. *op.cit*.
[59] Bandewar, S. and Sumant, M. *op.cit*.
[60] Parivar Seva Sanstha *op.cit*.
[61] Jowett, M. (2000): Safe Motherhood Intervention in Low income countries – An economic justification and evidence of cost effectiveness, *Health Policy,* Vol 53(3).
[62] Klugman, B and Budlender, D (eds.), (2000): *Advocating for Abortion Access*, University of Witwatersrand, Johannesburg.

whether it was a public or private facility, the cost went upto Rs.5000 for a sex-selective abortion.[63] Further the legality of the provider could also be an issue that affects cost. An exploratory study in Delhi showed that in middle class and lower income localities the charges for abortion services were higher for the illegal providers and the costs also went up when unmarried girls went for abortions.[64]

Expenditure data has also been collected at the household level from women who have undergone abortions. Again the national level studies like NFHS, RCH and NSSO have failed to collect such data when they have recorded pregnancy outcomes, and thus it is only a few small studies, which have gathered some data on out-of-pocket expenditures for seeking abortions. Also in public budgets abortion related expenditures are not indicated separately, except when there is a separate Plan scheme for upgradation of services or any other such new provisions. For instance, in the Maharashtra health budget of 2003-04 a sum of Rs. 2.5 million has been allocated under the MCH program for expansion of MTP services, and in the year 2001-02 Rs. 2.23 million was spent for expansion of MTP services.[65]

A study on health expenditures in 1987, which also recorded pregnancy outcomes, showed that mean expenditures for seeking induced abortions were Rs.300 per abortion, of which 41 per cent went to the doctor and hospital and as much as 36 per cent for medicines and tonics. Data from this study also revealed that the share of abortion expenditures in total household healthcare out-of-pocket expenditures was 0.21 per cent.[66] A similar study in 1990 recorded Rs.1258 as the mean expenditure per induced abortion and this was 0.54 per cent of total household health expenditure.[67] More recently two studies on women's reproductive health by CEHAT recorded mean expenditure for induced abortion as Rs.640[68] and Rs.989[69] (latter only private) per abortion. In these studies the share of abortion in household health expenditure was 0.16 per cent and 0.28 per cent, respectively.

In Rajasthan a much larger study in 1998-99 using the national health accounts framework has estimated expenditures on abortion state wide for both public and private health sectors.[70] This study recorded mean household expenditure on abortion as Rs.925 per abortion with a small public/private variation - for government services it cost women Rs.873 out-of-pocket and for private services Rs.977 per abortion. This study has estimated the value of the entire health economy of Rajasthan at Rs.30,034 million in 1998-99 with the public sector share being 29 per cent (Rs.8673 million). This amounted to 5.95 per cent of the state domestic product with the private sector accounting for 4.23 per cent of State domestic product (SDP). Of this the RCH expenditure (maternity, immunisations, antenatal and postnatal, abortions, contraception etc.) was Rs.6424 million, and of the latter abortion was Rs.160 million. Thus the share of abortion works out to 0.53 per cent of total health expenditure. Out of the total abortion expenditure, 82.5 per cent (Rs.132 million) was out-of-pocket expenditure and the rest by the public health sector. In the public sector the share of abortion in total health expenditure worked out to 0.32 per cent and in the private sector 0.62 per cent.

---

[63] Gupte, M., Bandewar, S. and Pisal, H. (1997). *op.cit*.
[64] Sundar, R. (2003): *Cost and Finance in Abortion,* Working Paper, Abortion Assessment Project – India, CEHAT and Health Watch, Mumbai.
[65] Government of Maharashtra (2003): Civil Budget 2003-04 - Public Health Department, Government of Maharashtra, Mumbai.
[66] Duggal, R. and Amin, S. (1989): *Cost of Health Care*, Foundation for Research in Community Health, Bombay.
[67] George, A., Shah, I., and Nandraj, S. (1994): *A study of household health expenditure in Madhya Pradesh*, Foundation for Research in Community Health, Bombay.
[68] Madhiwala, N., Nandraj, S. and Sinha, R. (2000): *Health, Households and Women's Lives: A study of illness and childbearing among women in Nashik district,* CEHAT, Mumbai.
[69] Nandraj, S., Madhiwala, N., Sinha, R. and Jesani, A. (2001): *Women and healthcare in Mumbai*, CEHAT, Mumbai.
[70] Indian Institute of Health Management and Research (2000): *Financing Reproductive and Child Health Care in Rajasthan*, IIHMR, Jaipur.

In recent years medical abortion as an option has been gaining momentum. Mifepristone is today used widely across the world and its use in India was legalised in February 2002 by the Drug Controller. While obtaining data on the pharmaceutical market is not very easy in India as selected consultants control this information and sell it at exorbitant prices, an estimate from IMS Health (August 2003)[71] shows that mifepristone sales in India was about Rs. 174 million over previous 12 months and at Rs. 320 per dose this translates into a whopping 540,000 medical abortions. One must note here that mifepristone was being used in India even prior to its legalisation and hence there is also a grey market and the above figure could be an under-estimate. Further the legalisation of its use by the Drug authorities is restricted to only gynaecologists directly or to hospitals which are recognised for abortion services. But the reality is that mifepristone is available over the counter and a lot of misuse of this drug might be taking place because evidence from the recent studies shows that doctors as yet do not seem to be using medical abortion as a significant option.

To conclude, the analysis of expenditure data shows that women have to spend substantial amounts in accessing both private and public abortion services. Public abortion services until recently were free of charge even though women reported out-of-pocket expenses (usually non-medical expenses like travel or on prescription drugs) in the various studies mentioned above. Currently abortion services in the public sector are free only if the woman or husband opts for some form of contraception, usually sterilisation or IUD, after the abortion. This conditionality existed even prior to user fees being introduced in 2000 and was the main reason, which distanced women from coming to public health facilities for abortions. The addition of user fees has made access of public abortion services for women even remoter. From the estimates from various studies referred to above one can conclude that induced abortions in public health facilities cost on an average between Rs. 300 and Rs. 500.

In the private sector there is a lot of variation in charges for abortion services. On an average early abortions cost women around Rs. 1000 for an induced abortion and late abortions close to Rs. 3000 per abortion. These become a substantial cost for the poor or even lower middle class women. And given that the larger numbers of providers are unqualified and/or uncertified the cost of unsafe abortions has to be factored in and hence post-abortion costs due to botched up abortions and various complications could be even higher. This is one unexplored area as far as abortion economics goes but what we know from Sample registration survey (SRS) data quite well is that 13-18 per cent of maternal deaths over the last two decades are due to unsafe abortions. Another dimension in abortion economics, especially related to the private sector, is the methods used for abortion. The obsession with curettage even in very early abortion, including doing what is now called check curettage after vacuum aspiration, is overwhelming amongst both certified and non-certified providers, and this necessarily adds to the cost as well the risk of post-abortion infections and problems. This is evident clearly even in the very recent studies undertaken under the aegis of the Abortion Assessment Project India, including the present study.

1.8 BACKGROUND OF THE SURVEY

This study is a part of the AAP-I studies being conducted on various aspects of abortion in 18 states of the country. The aspect of finding the rate of abortion, care received and cost incurred through a community-based household survey is being carried out in two states – Maharashtra and Tamil Nadu. The present

[71] Personal communication from IMS Health.

report presents the findings of the study conducted in Maharashtra. The research will come up with adequate information on abortion, which could be useful for policy making to ensure and safe and legal abortion care services for women. Some specific reasons for taking up this study are as follows:

- Very little information is available as to how the spontaneous abortions are managed. The profile of such women, their morbidity pattern etc. could help understand better issues related to abortion management.
- The study may be able to identify/record new reasons for abortion, such as sex determination/male preference, small family size norms; persistent problems in abortion care, such as availability and access.
- Better insights in linkages between quality of abortion care received and abortion morbidity may be gained. The manner in which abortion care is provided can be evaluated or judged by recording range of post abortion complications.
- Household expenditure on abortion care services could help us understand the financial burden on families and its implications for utilisation of abortion care services.

Aim of research: The overall aim of the research is to study pregnancy outcome analytically with a focus on rate of abortion and related issues. Further, the study aims at providing inputs to society at large and to different stake holders including policy makers to facilitate women's access to safe, legal and affordable abortion care services.

Specific objectives are as follows:

a) To arrive at estimates related to abortion incidence rate, such as,
   - To obtain proportion of women from reproductive age who have had abortions.
   - To arrive at estimates of rate of abortions, both spontaneous and induced.
   - To arrive at average number of abortions per woman.

b) To arrive at estimate of nature and burden of abortion related morbidity on women.

c) To document indications of /reasons for seeking abortion and to analyse the changing pattern, if any.

d) To study women's abortion needs in the light of their socio-cultural milieu.

e) To study women's choice of provider to meet abortion care needs.

f) To study expenditure patterns on abortion care.

Profile of Maharashtra

The present study is being conducted in the state of Maharashtra, which is situated in the western part of India, and carved out as a linguistic entity of Marathi speaking people. The present state of Maharashtra was formed in 1960 out of the territories of former Bombay state, Madhya Pradesh and Andhra Pradesh. It has a land area of 307,713 km[72] that is about one-tenth of the total area of the country. As per the 2001census of India, the total population of the state is 96.8 million, which is 9.42 per cent of the total population of India. As per the 2001 provisional figures, the national average of population density is 324 and that of Maharashtra is 314.[73] Forty five per cent of the state population is concentrated in 2 divisions – Konkan and Pune – which

[72] Directorate of Census Operations, Maharashtra (2001): *Provisional Population Totals, Series – 28*, Census of India, 2001.
[73] Government of Maharashtra (2002): Population: Trends and Prospects, *Human Development Report, Maharashtra*, Mumbai.

form the most industrialised part of the state including Mumbai. According to 2001 census, 42 per cent of the population resided in urban areas of the state, of which about 8 per cent resided in Mumbai alone. As per 2001 census, the Scheduled Tribe population constitutes 8.7 per cent to the total population of the state. According to the 2001 census data the sex ratio for the state is 922[74], a further decline in sex ratio, suggestive of the neglect of girl child and sex selective abortion. To curb this practice the sex determination tests were banned in 1988.

Table 1.1 Basic demographic indicators for Maharashtra and India

Index	Maharashtra	India
Population (2001)*	96,752,247	1,027,015,247
Per cent population increase (2001)*	22.6	21.3
Density (population/km^2) (2001)*	314	324
Per cent of urban population (2001)*	42.4	27.8
Sex ratio (2001)*	922	933
Per cent scheduled caste (1991)#	10.2	16.2
Per cent scheduled tribe (1991)#	8.9	8.2
Per cent literate (2001)*		
Male	86.3	75.8
Female	67.5	54.2
Total	77.3	65.4
Crude birth rate (1999)$	21.1	26.1
Crude death rate (1999)$	7.5	8.7
Total fertility rate (1998.99)⊗	2.5	2.9
Infant mortality rate (1999)$	48.0	70.0
Life expectancy (1996-2001)q		
Male	65.3	62.4
Female	68.2	63.4
Couple protection rate(2001)@	49.3	46.2

Source - * Provisional Population Totals, Census of India 2001, page 51.
Primary Census Abstract : Census of India 2001.
⊗Sample Registration System of Registrar General of India.
$ Economic survey of Maharashtra 2000-02. Directorate of Economics and Statistics, Government of Maharashtra, Mumbai.
q Health Information of India 2000 & 2001, Central Bureau of Health Intelligence, Table 2.13, Government of India.
@ Human Development Report, Maharashtra, 2002, Annexure table 1, Government of Maharashtra.

Compared with other developed states the health sector in Maharashtra is weak, not having kept pace with its general economic attainments. There are large intra-state difference and public investments and health expenditures have declined in the 1990s despite being inadequate. According to the state *Human Development Report*, *2002,* the Infant mortality rate (IMR) was 49 deaths per 1000 live births in 1998 and the Total fertility rate (TFR) was 2.7 in 1997. Most women complete their child bearing by the age of 35, with mothers in the age group of 20 and 24 years contributing 40 per cent, which is the highest for all the age groups. This highlights the alarming prevalence of marriages before the legal age for girls. The crude birth

[74] Directorate of Census Operations, (2001). *op.cit.*

rate of the state was 22.5 in 1998 and the maternal mortality rate was 310 in 1998. In any developing society decline in mortality precedes decline in fertility. Crude death rate (CDR) has dropped to 7.7 per thousand in 1998 from 19.8 in 1961. There is a wide gap between the rural (8.7) and urban (5.6) CDR.[75]

Maharashtra is one of the richer states, with a per capita income that is 40 per cent higher than the all-India average. The state derives its income mostly from the secondary and tertiary sectors, essentially from regions in Mumbai and Thane, leading to both sectoral and regional imbalances in economic development. Agriculture in the state continues to be largely at the mercy of uncertain monsoons. The average size of the land holdings has decreased from 4.28 hectares in 1970-71 to 2.21 hectares in 1990-91, impacting adversely on production.[76] According to the estimates of the Planning Commission, more than one-third of the state population is below the poverty line and there is not much difference between rural and urban areas.[77] According to the state human development report 2002, average calorie intake in rural Maharashtra has decreased over the years from 2,280 in 1960-61 to 1,939 in 1993-94. Nutritional inadequacy in individuals, more adversely of women and children, could mean undernourishment making individuals susceptible to infections. Both male and female literacy levels have increased in the last 40 years since Maharashtra was formed. According to 2001 census, the literacy rate in the state is 77 per cent, male literacy rate being 86 per cent as against 68 per cent for females.

[75] Government of Maharashtra (2002). *op.cit*.
[76] Government of Maharashtra (2002): Economic development: Growth and Equity, *Human Development Report, Maharashtra*, Mumbai.
[77] International Institute of Population Sciences and MEASURE DHS + ORC Macro, (2002). *op.cit*.

CHAPTER 2

STUDY DESIGN AND METHODOLOGY

The chapter presents the methodology developed and implemented for this research study. It also delineates briefly the processes conceptualised and set in place at various stages of the study to maintain scientific rigour and ethical concerns. Various methodologies have been tried out to estimate abortion incidence. We have used cross-sectional quantitative retrospective survey method. We have tried to overcome the problems inherent in any abortion estimation surveys described earlier while designing our methodology.[1]

2.1 SAMPLE DESIGN

Determining the sample size

Recording all the conceptions as well as all the episodes of pregnancy loss during the reproductive life of a particular woman is critical to community based abortion incidence research. To be in a position to acknowledge loss of a pregnancy, one should be able to **recognise the conception**. In case of induced abortions and stillbirths, conceptions are clearly recognised. However, in case of spontaneous abortions the issue of 'recognisable conceptions', especially those of early gestation remains unresolved.[2] The problem is accentuated in community-based research as pregnancy loss is recorded as per the perceptions of women research participants and not based on clinical records. This has implications for recording of both, an accurate denominator constituting all conceptions and accurate numerator, that is, spontaneous abortions. Knowledge of the 'population parameter' for the phenomenon under study is important information required to arrive at an appropriate sample size for surveys. Accepted estimate of overall spontaneous loss rates is stated to be 20 per cent of recognised pregnancies.[3] In the Indian context, the estimates of induced abortions drawn from the empirical research vary to a great extent.[4] Based on the literature reviewed, it was estimated that in India the population parameter of the pregnancy loss of the total pregnancy outcome is, on an ***average, 35 per cent***. Under-reporting of abortion incidence or incomplete coverage of pregnancy losses in retrospective inquiries have been widely acknowledged by researchers, especially those engaged in abortion incidence and fertility surveys.[5] [6]

The sample was drawn in such a way that it would enable estimates for abortion incidence for the entire state of Maharashtra, and also independently for urban and rural areas and for Mumbai. The entire state of Maharashtra was the universe for this study. The primary sampling units (PSUs), villages in case of rural

---

[1] Bandewar, S., Saha, S. and Khaire, B. (2004) : *Research Ethics in Practice,* CEHAT, Pune.
[2] Casterline, J.B. (1989): Collecting data on pregnancy loss: A review of evidence from the World Fertility Survey, *Studies in Family Planning*, Vol 20(2), pp. 81-95.
[3] Bongaarts, J. and Potter, R.G. (1983): *Fertility, biology and behaviour: An analysis of the proximate determinants*, Academic Press, New York.
[4] Saha, S. (2003): *Estimating Abortion Rate through Community Based Studies- Methodological Issues*, Working Paper, Abortion Assessment Project – India, CEHAT and Health Watch, Mumbai.
[5] Casterline, J.B. *op.cit*.
[6] Jones, E.F. and Forrest, J.D. (1992): Underreporting of Abortion Surveys of U.S. Women: 1976 to 1988, *Demography*, Vol 29 (1), pp. 113-126.

areas and census enumeration blocks (CEBs) in case of urban areas, were selected from the universe. The secondary sampling units were households. The population parameter, that is the estimated figure of total pregnancy loss for calculating the sample size was arrived at by using (a) informed guesses based on the earlier research findings vis-à-vis pregnancy losses, in terms of both spontaneous and induced abortions, and (b) estimates of spontaneous abortions based biological reasoning presented in scientific literature. This guided us to determine the total number of conceptions (reported) to be recorded to arrive at a sample statistique confirming the value of population parameter, and therefore the number of households to be included in the sample. We arrived at the sample size of 5000 households using systematic criteria and 'factoring in' effects **non- response at the household level,** which have critical bearing on applicability of the required statistical tests for the **purpose of generalization** (Annexure II).

Method of sample selection

For selecting rural PSUs two stage and for urban PSUs three stage stratified sampling procedure was adopted. The primary sampling unit was villages and wards in rural and urban areas respectively. The secondary sampling units were households. Houselisting in PSUs provided the frame for selecting households. The households to be interviewed were selected with equal probability from the household in each selected enumerated area using systematic random sampling. The sample was distributed proportionately over rural and urban areas of the state, which is in proportion of 3:2. Thus, we were to include about 3000 households from rural areas and about 2000 from urban. We also decided that to take atleast 30 households (about 10 per cent of households) in rural and 20 households from urban PSUs would be included in the sample. By doing this, we could ensure that the sampled households, the secondary sampling units, were from a larger geographical area. This helps reduce the cluster effect arising out of inclusion of more than one household from one PSU.[7] The sample size per PSU determined the number of PSUs to be selected from each of the rural and urban areas given the fact that we had arrived at total sample size for the study. Thus, we were to select 100 (3000/30) rural and 100 (2000/20) urban PSUs.

Selection of PSU

Units for the study were selected using a four-stage stratified sampling procedure. The ***first*** level of stratification was based on agroclimatic regions and thus was geographic. All the districts in Maharashtra were grouped into six contiguous regions according to their agroclimatic characteristics. The district composition of the regions is as follows:
Region I: Greater Mumbai, Thane, Raigarh, Ratnagiri, Sindhurdurg
Region II: Nashik, Dhule, Jalgaon
Region III: Pune, Satara, Sangali, Solapur, Kolhapur, Ahmadnagar
Region IV: Aurangabad, Jalna, Parbhani, Bid, Osmanabad, Latur, Buldhana, Akola, Amravati
Region V: Nanded, Yavatmal, Wardha, Nagpur
Region VI: Bhandara, Chandrapur, Gadchiroli

The samples within the urban and rural areas were selected according to the above agroclimatic regions.

[7] It would have been ideal to select one single household from each PSU to minimise the cluster effect to zero. However, for pragmatic reasons, it is not done and is an accepted norm in surveys.

Rural sample

The 1991 Census list of villages served the sampling frame in rural areas.

In the ***second*** level of stratification, the population size of each village was taken into consideration. The strata that we defined for the study were as follows:
Stratum 1: Villages with 31-149 residential[8] households
Stratum 2: 150-299 residential households
Stratum 3: 300-599 residential households
Stratum 4: 600-999 residential households
Stratum 5: More than or equal to 1,000 residential households

The villages with resident households less than or equal to 30 were excluded to reduce cluster effect. About 0.46 per cent of the total rural population got excluded because of this and about 12.24 per cent of the villages got excluded from the universe.

The ***third*** level of stratification was introduced to ensure that population from scheduled castes (SC) and tribes (ST) are adequately represented in the sample. For this, we examined the proportion of SC-ST population within each region. For regions I, II, V, and VI, where SC-ST population was more than 20 per cent of the total population of the region, an additional criteria was used for stratification at the third level. In that, the strata 1-4 were grouped together and were divided in to two sub-strata (a) villages with SC-ST population less than 25 per cent and residential households less than 1000, and (b) villages with SC-ST population more than or equal to 25 per cent and residential households less than 1000. (c) Villages with

[8] The census data indicate that in most of the villages there are a substantial number of non-residential houses. We excluded these from the beginning to minimise its possible adverse effect on the sampling.

residential households more than or equal to 1000, regardless of proportion of SC-ST population formed the third stratum. Thus, for regions I, II, V, VI there were three strata whereas for region III and IV, there were five strata from which PSUs were drawn in population proportionate to size (PPS) manner.

The ***fourth*** level of stratification was ordering villages within each of the above strata by the level of female literacy in the village. This exercise gave us a rural sample, which was spread over 103 villages from 91 tehsils in 29 districts[9] (30 districts according to 1991 census) (Annexure III).

*Selection of household*s: Households were selected using systematic random sampling with equal probability after undertaking an exercise of house listing. Random number initiatlisation was used to select the first household from the list of households and then onwards every n^{th} household was selected using the sampling interval. In case of villages with more than 300 households, they were segmented based on the existing wards from which two wards were selected in PPS manner. The same procedure was followed in each ward to select households in PPS manner (Annexure IV).

Urban sample

The list of 1991 CEBs served as the sampling frame. At the first stage, the districts were grouped in the same manner as was done for rural area. Within each of these strata based on region, cities/town were divided into three strata: self-selecting cities, district head quarter towns and other towns. In this, self-selecting city was defined as one whose selection probability was one. From these strata, sample of PSUs was drawn in the PPS manner (Annexure V). We selected wards followed by selection of CEBs in PPS manner using data from the Census handbooks. The urban sample covers 50 tehsils from 27 of the 30 districts. Three districts, Bid, Latur and Gadchiroli did not feature in the urban sample. We excluded the cantonment population, which constituted about 0.99 per cent of the urban population in Maharashtra. These populations are mostly dominated by men, and thus the exclusion.

Selection of households: Households were selected using systematic random sampling with equal probability after undertaking an exercise of house listing as was done in rural areas. In case of CEBs with more than 200 households, we limited the listing to the first 200 households. In the rest, enumeration was 100 per cent. The cut off point at 200 households was set based on the fact that it was an average CEB size (Annexure VI).

2.2 TOOLS OF DATA COLLECTION

The literature on abortion surveys from the world over shows that over the years, the formulation of the tools of data collection has improved. Alternative methods of gathering information from the research participants have been developed over time based on experiences in the past. A review of the major surveys in Indian context, which have dealt with abortion incidence, such as NFHS - 1, NFHS - 2 and the rapid household survey of the Reproductive and Child Health project 98-99 show that they have used variants of the direct method of enquiry for tracing pregnancy history.[10] However, none of these surveys could gather higher abortion rates.

[9]Bombay being completely urban does not constitute part of the rural universe.
[10]Saha, S. *op.cit*.

We used three types of tools for data collection in this survey, area profile recorder (APR), household interview schedule (HHD-IS) and woman's interview schedule (WS-IS). The basic conceptualisation of the protocols was fine tuned with the help of feedback from all the team members including the field researchers. The protocols were finalised based on the experiences of pretesting. The tools were pre-tested by conducting mock interviews among the team members, exploratory interviews with our close acquaintances and also in the community. We translated the protocols into English and Hindi only after we finalized the Marathi ones.

The APR collected information about the status of the PSU, social structure, the overall development status of the area in terms of availability of basic amenities, its approachability to the outside world, its access to educational and health facilities (Survey Instruments I).

The HHD-IS obtained detailed information of household members about their demographic data such as sex, age, marital status and educational qualification (Survey Instruments II). It also sought information on general health care seeking behaviour and their choice of provider, as this information provided the contexts in which women seek treatment for delivery and abortion care needs. Information on the household's access to basic amenities, to adequate food throughout the year, on asset ownership, occupation and income, which was also gathered through HHD-IS, along with other relevant information, have been used for construction of socio-economic status indices. We also obtained data on religion and caste/tribe of the heads of the households. The information on age, sex and marital status of household members were used to identify eligible woman research participants.

WS-IS was administered to all eligible women (ever married aged 15-54 years) from the sampled households in order to obtain detailed information about their pregnancy outcomes, which provided the denominator needed for computation of rates and ratios related to abortion incidence (Survey Instruments III). Major heads for data collection in the WS-IS are described below.

Personal information: This was to record some of the demographic information about the eligible women, like current age, age at marriage, marital status, religion, caste, and information on social attainments like education, occupation. There was a separate sub-section with a set of questions to elicit more accurate information regarding age of the women, in case they did not know their birth dates, which is often the case with non-literate women.

Obstetric history: Obstetric histories were recorded in detail, constituting the core of the data obtained from the eligible women. The total number of reported pregnancy outcomes thus recorded forms the denominator for various estimates related to abortion incidence. Through this, we could trace the events of pregnancy loss[11] during a woman's entire reproductive life till the date of interview. We also obtained data on outcome of each pregnancy during her lifetime along with other relevant information like sex, current age of the surviving children, age at death in case of deceased children, place of delivery, contraceptive used and failures, failure of family planning operation, age of women at each of the pregnancy outcome, and the calendar year and month for the same. For each pregnancy, information was obtained about the use of ultrasonography and its purpose. In case, women had not used health care facilities for delivery, reasons were sought for this. In order to capture abortions, which might have gone unreported, questions were also asked about the episodes of dilatation and curettage (D&C) procedures that women had undergone in the

[11]The word pregnancy loss is used synonymously with pregnancy wastage.

past and the reasons for the same. Special probes were used when the spacing between subsequent births were not explained with contraception usage, including abstinence. These probes were used to ensure that there is no under reporting of pregnancy loss due to recall lapse.

Spontaneous abortions and stillbirth/s (Reference period - from 1996): The reference period of five years was fixed with the assumption that this period will suffer less recall lapse and would also enable to get sufficient number of events for statistical computation. In this category**,** we obtained data on the management of all spontaneous abortions and stillbirths that happened during the reference period, choice of provider, direct and indirect costs incurred for its management and the social cost borne by women and their families. We also collected data on women's workload during that particular pregnancy, availability of social support or lack of it, and their perceptions about what may have caused it.

Spontaneous abortions/stillbirths: Perceived abortion complication (Reference period- from 1996): Data was obtained on perceived morbidity that women attributed to the respective episodes of spontaneous abortions or stillbirths, which happened during the reference period. We also recorded post abortion morbidities, both with and without probe. The probes were provided in the form of a set of cards, with one symptom written on each card. Women, who could read, were requested to go through each card and chose the ones with symptoms that they suffered from written on them. The field researchers then enquired with them about the onset of each of the symptoms. We recorded the women's responses in the appropriate cells in the interview schedule.

Spontaneous abortions and still birth/s (before 1996): Data gathered through this section related to, reasons for either spontaneous abortions or stillbirths as perceived by the women, type of care sought and total cost incurred.

Induced abortions (Reference period - from 1996): In this section, we obtained information on type of care sought for getting an abortion done, women's choice of abortion care service provider and direct and indirect costs incurred for the same. We also collected data on woman's work load during that particular pregnancy, availability of social support or lack of it, individuals involved in the decision making, and the reasons for undergoing abortion.

Induced abortion: Perceived abortion morbidity/complication (Reference period - from 1996): In this section, we collected data on perceived morbidity that women attributed to the respective episodes of induced abortion. The method of data collection was the same as described in the above for spontaneous abortion. We also recorded detailed information about the treatment seeking behavior for managing complications, if any.

Induced abortions (before 1996): In this section, we obtained the data on the reasons for induced abortions mentioned by the women for the period outside of the reference period, type of care sought and cost incurred for the same. These data were not as detailed as those collected for abortions which took place during the reference period.

When the data was sought for pregnancy losses, before 1996 it was less in-depth, as compared to data collected for the reference period.

Availability of data across spontaneous and induced abortion on various aspects, such as, type of abortion service providers chosen, availability of social support during and post abortion, and type of post abortion complications which women were faced with, allowed us to examine whether the type of abortion had bearing on these factors.

Health care services sought for sex selection tests: In this section we gathered data on type of health care services sought for sex identification during pregnancy, the distance at which these facilities were situated, source of information about availability of such diagnostics for sex identification at these facilities, direct and indirect costs incurred for getting these tests done, and the individuals involved in the decision making. These data would allow us to know the extent of abuse of pre-natal diagnostics for the purpose of sex identification and selection, its relationship with the sex composition of the living children at that point of time, cost of the test, and the profile of health care facilities indulging in these practices.

2.3 FIELD RESEARCHERS AND THEIR TRAINING

Profile and responsibilities

The team of field researchers varied in size throughout the study period from 21 to 27.[12] Field researchers formed a heterogeneous group in terms of educational background but homogenous on many other grounds, such as, life experiences, socio-economic status, age, lack of work experience in the past, schooling from the same institute made their significant contribution to the project. Most of them were not married. Age range was between 18 - 32 years, with an average age of 23 years. Three were trained in social work while the others were from various other disciplines, such as, humanities and social sciences.

The same group of field researchers was involved in house listing activity in addition to the responsibility of data collection and other related field based activities. The advantage of involvement of the same team in house listing has been that we could forgo mapping as the same team would be doing the house listing and data collection. They also shouldered the responsibility of planning in the field at the sub-team level such as travel, stay and other logistics. The roles and responsibilities were rotated among the sub-teams depending upon their willingness and level of confidence about taking up a particular task, including handling of financial matters and rapport establishment in the communities. This, and all other field level decisions were collective responsibilities of these sub-teams. There was no independent category of supervisory staff at the field level at any phase during the project period, but there were team leaders from among the field researchers, who took the day-to-day decisions of the team in the field.

Training objectives and content

We conceptualized and organized a five-week training programme to equip field researchers to be gender sensitive and conscious of ethical practices in social science research. The prime objectives of the training were (a) perspective building around abortion and women's health from the rights and public health perspective, significance of social science research and its premises – both scientifically and ethicality; and (b) capacity building in terms of skills required to shoulder responsibilities involving field work in such

[12] When the field work started we recruited 27 field researchers, but over the period of field work there were drop outs and the field work was completed by 21 researchers.

surveys, such as, house – listing, administration of tools of data collection and conducting community meetings. This was a mix of normative functional needs of the new team members and the ones, which arose in the light of the fact that we were striving to evolve alternative methods to make such a large-scale survey gender sensitive and ethically sound drawing from feminist approaches in social science research. Thus, this training was intended to be more than an exercise in merely imparting mechanically, in isolation, the skills required for implementing the project or conducting the fieldwork.

The training took three weeks to complete perspective building and basic skills in administration of protocols. However, we further spent about two weeks helping them perfect their skills in community meeting organization, and administration of protocols. Another week was spent to train them in house listing, reading census maps, and in the basic statistical techniques, such as, calculating sampling interval to draw houses from the house-listing constituting the sample, calculations required for ward selection using PPS method. This allowed the team to digest the concepts and the project in a more holistic manner. It also gave them time to work together and build the team solidarity.

Training methods: During the training period, we used multiple methods of training, such as, group discussion, role plays, puzzles, body mapping, question/answer sessions, games, skits, group work, lectures followed by open discussions, mock interviews, and mock community meetings. Varieties of relevant and appropriate resource material were made available to field researchers. We also screened slide-shows and films on abortion and gender issues during the training. In addition, field researchers were provided opportunities for hands-on training as regards house-listing, community meeting organization and administering of the protocols in presence of trainers.

Training impact assessment: The training was designed and conducted with specific objectives in relation to the project. We, therefore, chose to assess the usefulness of training for the field researchers by giving them a pre-training test and repeating the same post-training. In general, the comparison between the responses to pre and post training test indicated that training made a positive impact and took them ahead towards progressive thinking on core issues. It helped them see ground realities from a different angle and with an alternative perspective, in the wider socio-political context, which is dominated by various inequalities – class, caste, and gender.

2.4 PILOT TEST

We pilot tested the entire methodology with the 5 per cent of the total sample size of households, keeping in line with the norms of sample size for pilot-testing. It included both rural and urban areas in 3:2 proportions corresponding to that of universe and the selected sample. Pilot test was conducted in 4 villages and in 4 urban areas near Pune (2 slum and 2 non-slum). This exercise included house listing in the selected areas, selection of households by systematically going about calculating sampling interval and random initialisation etc., conducting community meetings, filling in area profile recorder, seeking informed consent and finally conducting interviews.

In pilot test, 262 households were selected, of which 137 were from rural areas. The household response rate was 99 per cent. From these households, 332 women (ever married aged 15-49[13]) were found to be eligible for interview. Of these interviews were completed in 90 per cent of the cases. In our pilot test we got an overwhelming response regarding giving written informed consent. For the reference period (which was for 3 years[14]) we recorded 78 pregnancy outcomes, of which 63 (80.8%) were live births, 1 (1.2%) was still birth, 8 (10.2%) were spontaneous abortion and 6 (7.7%) pregnancies resulted in induced abortion. For the period before reference period there were 641 pregnancy outcomes, of which 579 (90.%) were live births, 10 (1.6%) were stillbirths, 31 (4.8%) were spontaneous abortions and 21 (3.2 %) pregnancies resulted in induced abortions.

This exercise of pilot-test guided us to make some important informed changes in our methodology. For example, we increased the reference period for the final study from 3 years to 5 years, as it would give us more number of pregnancy losses and would enable us to apply the statistical tests for care and cost data. This is because we did not get as many abortions as we expected in the reference period, which was previously fixed at 3 years. Also we increased the upper age limit of the eligible woman from 49 to 54 years, as this would give us more numbers of pregnancy losses for a larger period. The pilot test also helped us to further streamline and fine-tune the method of recording age, post-abortion morbidity, and events of D&C. Based on our experience during pilot-test[15] we decided not to organise community meetings in urban area.

2.5 FIELDWORK IMPLEMENTATION

Given the specifics of the research study, such as, statewide survey, a large team of field researchers engaged in data collection in four sub-teams, planning the co-ordination and communication system between the field teams and the office, planning the field work to optimize the resource utilization, planning broadly the work at individual units of study etc. It was necessary that the 'conduct of the study' was well thought out and planned in advance. The conduct of the present study could be viewed in terms of two major phases. One, the ground work consisting of a range of tasks before launching the field work and two, conduct of actual field work. Below is the brief presentation of the conduct of the study.

Ground work

Formation of field teams: During the period of training, the field researchers - the new team members, were observed for their various qualities, their suitability for various tasks and responsibilities as regards the requirement of such fieldwork. Appropriate combination of skills, aptitudes and maturity; smoother interpersonal interactions, mutual trust and regard for each other's strengths and weaknesses were the aspects that we paid attention to while constituting sub-teams of 6-7 individuals towards the end of the training of field researchers. During the course of fieldwork, we also reshuffled the sub-teams to some extent based on the team's feedback and constraints expressed about the particular combination of the

[13] For the actual survey the eligibility as regard to age was increased to 54 years.
[14] For the actual survey the reference period was increased to 5 years prior to survey.
[15] In urban areas, we tried organizing community meetings but we did not succeed. In most of the urban areas there is no 'community sense' as that prevails in rural areas, also there were other logistical problems like space. Thus, we considered it logical not to organize such meetings during final study.

team. This was done in consultation with the respective teams and especially with the persons who expressed any concerns and constraints about one's own responsibilities or others in the team.

Obtaining Census maps for urban PSUs: We used data from Census 1991 for selecting PSUs. In case of rural PSUs, the village maps were available in the District Town Directories of the Census, which are regularly published. In case of urban area, PSUs were CEBs, for which the maps in any published forms are not available. We, therefore, had to obtain maps from the Directorate of Census Operations, Maharashtra.

Field work

Houselisting: Houselisting was the first of the field based task and thus the first opportunity to interact with people from the selected area. It was important the field researchers made positive impressions about themselves, the institute and the project itself during these first interactions, as it would have implications for community's response to our request for data collection in their area. Keeping this significance of the phase in mind, we disseminated basic minimum information about the institution and the project including its relevance to all. In rural areas, in the same interaction field researchers also informed about the community meetings scheduled for the entire village. In general, interactions during the house-listing being the first one-on-one contact were of critical importance from the point of view of developing mutual trust in a short time span which had contributed, though intangibly, to smooth field work. These house lists were then used to draw the sample households.

Organising community meetings: Unlike other large-scale surveys, we conducted meetings in our selected rural PSUs, where all villagers would be invited. The main objective of conducting the meetings was to strengthen further the rapport with the community through the support of the villagers rather than the power holders and also to inform the community about our organization and objective of our study. It also served as a means to express our gratitude for their prospective participation in the study.

The meetings were fairly structured and yet had the flexibility in terms of time and issues to be covered, especially after core minimum of information was disseminated along with introduction to the institute, its work and the project and our expectation regarding community's cooperation during the field work. We presented information on general health concerns, about the rampant ill practices in health care provision such as irrational use of injections and saline, people's right to health care services, the minimum health care services and infrastructure that public health facilities at different levels should have, and anaemia. We used poster exhibitions prepared by CEHAT for dissemination of the information. Lastly, we kept time for open discussion inviting questions about what was presented and for vote of thanks, wherein all those who enabled organizatioing the meeting were at the centre stage regardless of who they were in terms of caste, class and office holders, sex.

We were able to conduct meetings in 91 of the 103 PSUs. By and large the meetings were well attended and well received and were found mutually useful. In about 11 of the PSUs, it was felt that attendance was not up to our expectation. We were particular about holding meetings at places where members from the minority groups could come and participate in the meetings. The mian reason for not being able to conduct the meeting in 12 PSUs was reluctance of the community. At times, specific circumstances like rough

terrain, death events in the village, and language problem also obstructed conduct of community meetings. There were requests for repeat community meeting in 22 PSUs. We could meet these requests only in 16 of them.

Collection of data

The data on core themes and other allied/complementary themes were obtained by using three types of tools for data collection as presented earlier in this chapter. This brief presentation that follows is about actual administration of these protocols in the field situations.

Area Profile Recorder: This involved meeting various key people in the community, representatives of the community and government officials up to the level of taluka. It also required locating data from the government documents. Thus the team members with skills to interact and deal with varieties of personalities; to unravel the community dynamics through such interactions; and to be able to share this understanding with the team when it meets at the end of the day were entrusted this responsibility. Though the completion of total APR usually took about three-four days, that is, almost the entire period of the fieldwork duration in a particular PSU, some basic minimum information, such as, information about village events was collected before we started administering HHD-IS and WS-IS. We used these information as reference points to facilitate research participants to chronologically locate their life events with better accuracy.

Household Interview Schedule: For each of the selected households, one interview schedule was administered to get household level information primarily aimed at understanding socio-economic profile of households and family profiles in terms of size and composition of households. We preferred responsible male member/s to respond to this interview schedule, especially to the sections on economic activities, land ownership, business matters etc. This is because earlier empirical research experiences show that often women are not well informed on these aspects. However, women have responded to this protocol and in rare instances also younger members of the family in the absence of anybody else in the households to do so. More than one respondent; including women of the household answering to this interview schedule were welcomed and encouraged to enhance accuracy of the data gathered through the process of convergence. The needful was done to facilitate the process of informed decision making at the end of prospective research participant regarding participation in the research study. The time taken for completing interviews took about 20-30 minutes, which was determined by more than one factor. These include the extent of research participant's curiosity to know more about the institute, the project, its relevance, prospective gains, language constraints, and cultural barriers.

Women's interview schedule: These were administered to all eligible women (ever married age 15-54 yrs completed as defined for the present study) from each of the selected households. Additionally this sequence also helped to administer women's interviews after some basic orientation of all those interested and concerned from the family and creating more conducive environment for women's interviews on more personal level information. We were able to complete all the required interviews in a particular household in one go in majority of the cases. However, when required we made multiple visits and remained particular to ensure that the day and time was convenient for research participants.

Like in case of household schedules, we allowed adequate time for women to make an informed decision regarding their participation in the study. The time required in completing interviews with women ranged between 15 and 45 minutes. By and large interviews were completed in one go.

We also paid attention to the way questions were sequenced and the manner in which they were posed during the process of interview. Given the sensitive nature of the topic of the enquiry, we ensured that women were comfortable to respond to questions that we posed, especially those related to pregnancy loss. Also the questions regarding reasons for undergoing abortion, details about sex identification tests were placed towards the end of the protocol.

2.6 DATA QUALITY CONTROL

An important task in any research is to maintain quality of data being obtained. In such a large survey spread across wider geographical areas and with more than one field teams engaged in field work demand a systematic mechanism in place to achieve the best possible quality of data. We primarily used three mechanisms to check on quality of the data obtained. They are described in brief below.

a. Reference manual: As mentioned earlier, field researchers were divided into 4 field teams. The protocols used have been fairly complex. The first and foremost need in this context was to make available some ready reference manual for field researchers, which could be referred during the fieldwork. We therefore prepared a Reference Manual in Marathi as an on-line guide for the entire project team.[16] The Reference Manual contains detailed instructions about how to go about administering each question in each of the protocols. It carries information of each protocol, objectives, major information heads, structure of the protocols, numbering system and rationale for each question included in protocol to facilitate field researchers understanding of the protocols which we expected to contribute to improving quality of conduct of interviews. Further, it contains detailed instructions for systematic administration of the protocols, and a list of checks to for both field researchers and field editors (Annexure VII A, B, C) which is to be filled after data collection in each PSU. This automatically maintained uniformity in the processes that were conceptualized for data collection including the nuanced instructions to be followed while administering the three protocols. It also contained other complementary writings facilitating quality field work.

We also encouraged collective reading of reference manual among field researchers during fieldwork to clear doubts that may have emerged out of the field situation they faced. This was found to be a useful exercise while conducting interviews.

b. Field editing: It is an often used method to ensure completeness and internal consistency of the data gathered in surveys. We too used this method for the same purpose. The data from every interview schedule got checked for each and every item before the team left a particular PSU by somebody trained for the task. As often is the case, a person was entrusted with this responsibility exclusively for she has to check the data gathered by the entire field team of about 4-6 field researchers. It saved on any repeat visit to the PSU, which is often difficult to make and is a drain on scarce resources.

---

[16] Bandewar, S., Khaire, B., Saha, S., *et al.* (2001). *Sandharbha Pustika*, Community Based Study on Abortion Incidence, CEHAT, Pune. This Marathi Reference Manual is also available in CD.

c. On going peer/in-group support: We encouraged team leaders to be present during interviews conducted by their team to observe critically to enable maintain the ethical and scientific standards of interviews. This was done in a non-threatening manner and was devoid of any hierarchical spirit of supervision and monitoring and proved to be very effective. It was more a peer learning and positive peer pressure that was in-built in this mechanism thus was well received and enthusiastically managed.

Additionally, responsibility of supporting the field teams as regards quality conduct of interviews was also entrusted with the team leaders who were by and large responsible for field based editing of interview schedules. The support was provided in different ways. For instance, the team leader accompanied field researchers on and off. The person also took rounds around the PSU when field researchers were busy conducting interviews and observed the actual conduct of interviews. Field researchers' need for such support, peers' observations about inadequacies in conduct of interviews or team leader's assessment that the person needed such support based on trends in the interview schedules filled in by a particular researcher, or those based on discussion in the in-group meetings or interpersonal communication with a particular researcher were monitored. We tried to make the role of the team leader as non-threatening as possible so as to maintain the spirit of 'being equals' between her and the rest of the team members. In addition, the team leader supported and responded to needs of field researchers on individual basis. For instance, in case of refusal to participate in the research, the team leaders made an attempt to meet the person concerned based on the assessment of the field researcher about the reasons for refusal and with a hope that such a visit may help favourably.

d. Regular in-group sharing: Field researchers convened regular in-group meetings in the field, at least one in each PSUs. One of the major objectives was to discuss the problems that they faced while conducting interviews. These meetings also served as a platform for the field researchers to share their emotions with the group and share their understanding and analysis of women's live situations, ground realities which often made field researchers to ponder, introspect and discuss the larger context. In initial phases field researchers took time to traverse through the section of questions, which was designed to facilitate calculation of age in case of women who couldn't state the dates. The team discussed such concerns almost on a daily basis in those phases to help each other and to find the best methods to do it in a flawless manner.

e. Reduce non-response: In order to reduce sample loss due to absence, households were visited either in the early morning or late evening. Also a minimum of five repeat visits were given if eligible woman in the selected household was not present at the time of interview. In case of refusal, in most cases repeat visits were made by the team leader.

2.7 PROBLEMS ENCOUNTERED IN FIELD

As in any field survey, expected and unexpected circumstances arise which may affect fieldwork. Some of the problems encountered are described below, however we are confident that it would not have adversely affected our data.

Quite often during houselisting in rural areas field researchers faced problem in getting the current population, ward wise population when required, identifying ward boundaries, population migrating seasonally to farm around villages were the areas where we faced difficulties quite often. In some villages, house listing was

extremely demanding especially because of the difficult terrain and/or wide geographical spread and/or lack of any transport facilities.

In urban areas field researchers faced a number of problems while completing house listing. For instance, the maps being of 1991 census, they have to come across difficulty in identifying boundaries simply because of the new structures/new roads those have come up and also of demolitions of some structures and landmarks in the course of ten years of time span. At times, sheer disproportionate nature of maps created serious problems for locating boundaries. Often, the landmarks and boundaries indicated in the census maps especially those of Bombay PSUs were quite inadequate and/or erroneous. Maps lacked uniformity as regards details shown, symbols used and proportions used. Another serious problem was of gate keepers/watchmen not allowing field researchers an entry into their complex while enumeration, especially in high profile housing complexes. In some of those situations, field researchers made attempts to contact them on telephone. It worked in certain situations and did not in other situations. In certain situations, in some of the urban areas including outside of Mumbai, field researchers had to go through stressful situations as they were feeling disturbed and low by unnecessary hostile and unpleasant reactions of people. The major problem faced on account of people's reluctance, cold or hostile response was in upper middle class areas of Mumbai.

Field researchers encountered difficulty in accommodation in some PSU for the field researchers. In many rural PSUs the survey team faced problem to access those PSUs from bus stand or the place of residence. Availability of food was also a problem for many PSU, both rural and urban. In those cases, two or three researchers had to go a long way to get food or carry some dry food for lunch.

Besides the problems mentioned above in certain instance our field researchers, who are all female, faced problem of eve teasing. In one such instance, two men followed 3 field researchers when they were returning from data collection till their place of residence in that PSU and refused to leave. Police had to be called to handle the situation.

2.8 METHODOLOGICAL ISSUES

Estimating women's age: It is well known from earlier research experiences that women particularly those with no or less education often find difficult to date events in their life trajectory, including their own birth dates and of their children. Often, for a range of reasons, they also do not have any documents carrying records of these dates. Thus, it was essential for us to develop a mechanism, which would facilitate arriving at women's 'close-to-accurate' age. We developed a rather elaborate set of questions based on her age at menarche, constituting a section in interview schedules to be administered with women. In case of women's inability even to tell us information about these, we used 13 years as an average age at menarche for Indian women for rest of the calculations to arrive at her age. We also recorded major local events, major natural calamities, and local festivals, which were then used as marker events to help women place their life events along the time trajectory. Additionally, we had prepared a calendar of major national historical events to complement the above for the same purpose. Birth charts (Annexure VIII) were used to facilitate field researcher and women to record various life events along a chronological order. This together helped to obtain the most accurate information possible on women's age and other events that this research required. The values of Myer's index used to assess accuracy in recording of age for men and women demonstrate

that error in recording of women's age is lesser compared to that of men, which could be attributed to above technique used in case of arriving at women's age.

Reporting of pregnancy outcome dates and years: A similar problem as that of recording of accurate age was encountered while recording dates of pregnancy outcomes, especially of early pregnancy losses. We used the same facilitating tools to arrive at these timings. Detailed probes in terms of seasonal calendars, local festivals and events, national festivals, events were posed to enable close-to-accurate dating of pregnancy outcome.

Recording pregnancy losses: To attend to the problem of under-reporting – conscious or unconscious - of incidence of pregnancy loss, we introduced probes. One, we probed into reasons for unusually longer time spans (three years or more), especially if women did not mention use of contraceptives between two consecutive children and were co-habiting with their husband/partners. Two, in order to facilitate women to elicit unreported abortions probes were posed about the D&C procedures that women had undergone in the past and the reasons for the same.

Underreporting of sex identification tests: Use of sex identification and followed by abortion is a common practice in India and Maharashtra, too. In our patriarchal society it is considered legitimate to do so for economic and other practical constraints to raise more number of children and the need to have at least one male child to inherit and continue the family line. At the same it is not talked about overtly and people prefer to keep silent about it. Besides, it is not legal to use pre-natal diagnostics for sex identification. Against this backdrop in general, we feared under reporting of sex identification tests conducted as well as sex selective abortions followed by such tests. In Mumbai, we feared higher under reporting compared to other parts of the state. This we attribute to the wide press coverage of the Supreme Court's hearings on the petition appealing to bring amendments in the existing legislation regulating use of pre-natal diagnostics, such as, ultrasonography and state streamlining the monitoring mechanism. In response to these hearing which took place around the time when we conducted field work in urban areas, the state health administrators also launched campaign against abuse of ultra sonography which was in the form of slogans and messages at public places. Our hunch is that sudden visibility of the issue in the press perhaps made women to be watchful about their responses to specific questions related to this topic during interviews and they might have decided against disclosure of such information.

Reported income and its accuracy: It is not unexpected to experience difficulties in recording data on income and asset ownership in community based empirical research. We primarily faced two types of problems in recording these data. (a) Households and/or individual members of households if were engaged in economic activities outside of the service sector, people found it difficult to state their income. There were multiple constraints in doing so. For example, income from agricultural activities varies to a great extent from year to year and also from season to season. In certain situations, people were not in position to convert their agricultural produce into rupees as the produce were used at home for domestic consumption partially or fully, the market values varied in case they sold it which made the task of arriving at income difficult and rather daunting. People often were engaged in more than one income generation activities, which in most cases are irregular. Incomes were also stated in 'kind' and it was difficult to translate/convert it into rupees. Given this reality, we had developed a detailed set of questions on various dimensions of income generation activities. For example we posed questions specifically about income from livestocks, income-generating items like tractors, rate of daily wage, pension, money send by other members. Incomes

from both main and subsidiary occupations were asked. (b) The other major problem we faced was people's reluctance to disclose their true incomes. And thus, the issue of completeness of reported income remains unresolved. Inconsistencies in the stated income and the standard of living that was reflected in the assets at home provided a context to reported income.

Classification of abortion: In a few cases we came across instances of pregnancy loss that was to classify as either spontaneous or induced abortion. For instance, in one case where a woman went to a doctor with problem of delayed menstruation. The doctor without doing any pregnancy test gave her pills for inducing menstruation. She got her menses after few days, but as she felt that bleeding was heavier than her usual menstruation she felt that she might have been pregnant and that she had aborted the foetus. In yet another case, a woman reported that she missed her periods for two months and when she went to the doctor, who prescribed sonography and suggested D&C, but clarified that she was not pregnant. But during her interview she strongly said that she was definitely pregnant. We could understand her viewpoint as this episode happened after many years of marriage and this might well be a case of 'pseudo pregnancy'. There were in total five such cases of 'possibly induced abortion'. For our study we decided to include these cases for analysis as induced abortion as this being a community based study we relied on whatever was reported by the research participant.

2.9 ETHICAL CONDUCT OF THE STUDY: PROCEDURES, ISSUES AND CONCERNS

Ethical considerations are essential elements in any social science research. The nature and content of the present study posed a range of ethical dilemmas, which were attended to from the stage of its conceptualization. To maintain the ethical conduct of the research we also set some essential procedures in place. Below is a brief presentation of procedures we set in, of a range of ethical concerns we had, issues, and dilemmas we faced with and the strategies we evolved to address them.

Ethical Dilemmas

Seeking informed consent: It is essential that everyone in a particular research activity understand the process of and the spirit behind seeking informed consent from the prospective research participants. In the present study, we prepared an introduction letter for prospective research participants, which enabled them to know adequately about us, about the institute, about the research project and about their rights as research participants along with contact details of the staff at CEHAT responsible for the project (it was a part of the consent letter, which was given to the participants). In addition to the written note, we invested time in explaining it orally to research participants. Although we made efforts to seek written informed consent from eligible research participants, they had the choice to opt for verbal consent. The written note posed a serious constraint in case of non-literate research participants. For them we took extra efforts explaining the content of the letter paragraph by paragraph. This allowed time and space for them to internalise and understand the consequences of their participation in this research.

During the process of seeking informed consent, we faced certain dilemmas while seeking informed consent with certain specific members of the community:

- *Minors:* In case of household interview schedule, we at times had to interview individuals younger than 18 years who were able to give us household level information. The reasons for doing so were either

no other individual was available despite our repeated visits; the other members were not in position to respond to us because of old age or busy schedule. In the latter situations, we sought consent from both, the person who was interviewed and the person responsible at home. We also insisted for consent in addition to assent as the data being obtained was of the entire household and not only of an individual. But in the case of individual women (more than 15 years and less than 18 years) interviews we did not strictly adhere to the above rule of seeking consent from other adult members in addition to their assent for (i) they had already started their married life and (ii) we found them in position to understand the consequences of their participation in our study. Unlike household level information, the data obtained using these protocols were of the concerned individual.

- *Women who do not seem to have adequate comprehension:* When based on our assessment we found eligible women not in position to have adequate cognition and comprehension, we did not include them in our study. We also did not choose somebody else to be interviewed on behalf of her as proxy.

- *Involvement of translators:* In any large-scale survey in a country like India, there is always the possibility of meeting prospective research participants who are not familiar with the language in which protocols are prepared. In the present study we had prepared protocols in three languages (Marathi, Hindi and English). However, in four of the PSUs we faced with communities speaking other than the languages that we had prepared the protocols. These research participants constituted about 1 per cent of the total sample. Involving translators for conducting interviews involves a range of ethical issues and concerns. There are also some inherent risks or limitations of involving translators at such stages. In our case translators not going through the collective training process must have made qualitative difference in interviews they conducted despite their detailed orientation about the project, the protocols and various other related matters. Translators were accompanied by field researchers to conduct interviews. Thus, they functioned more as mediators to overcome the language barrier that existed between research participants and field researchers. However, there was no way for us to know whether translations being done by the person outside of the team were appropriate or not. For instance, field researchers had no way of knowing if truly informed consent was obtained, or if there were problems while completing the interviews. Primary analysis showed that there was no significant difference in the important findings of the study between the data, which involved translators and which did not. Thus we took the decision to include those data in overall analysis of our study.

Maintaining anonymity and privacy: Maintaining anonymity of the data is one of the ethical responsibilities of the researchers and forms the foundation of an ethically sound research. In a study like this, it assumes more importance because of the socio-cultural sensitivity of the subject matter under study. During the process of introduction, research participants were assured that the data gathered during the course of interview would not be shared except for research purposes. Research participants were also informed that the information obtained from them would be used only for aggregate level analysis and no analysis would be carried in a way which would reveal individual identities of research participants.

In order to ensure privacy, in case others happened to be present at the place of interview; we tried to seek their cooperation to provide woman the required privacy. Despite that, if others sat through interviews, we recorded the situation specific observation along with their relationship with the woman research participation, which may tell the influence of others' presence on woman's response pattern, if any.

Protection of research participants: Implied in any abortion research is the risk of singling out women with abortion experience, which had the potential of breaching confidentiality around women's abortion experiences. The methodology used to meet the prime objective of the study, required us to include all women of reproductive age as research participants from the sampled household units, who constituted 'denominator' for various calculations related to abortion incidence rates and ratios. As part of the strategy to tone down the explicit emphasis on abortion research initiative, the title of the project on each of the tools of data collection read '*Pregnancy Outcome: A community based study*'. We took extra efforts to be more sensitive with minor women who have had abortions.

Meeting with community's expectation: In large scale community based studies, researchers get struck with the bitter ground realities about people's living conditions and their wide ranging needs to manage bare minimum subsistence and survival. It is not possible to address these needs, which are results of the larger oppressive social system and inadequate state policies. We laid down the framework for field researchers to respond to such needs against this backdrop and explicitly acknowledging our limitations in this context. Accordingly, this was also articulated in our letter of introduction meant for research participants and other information pamphlets. There were also a number of other situations in which the field researchers pro-actively supported the individuals or individual families as regards their health care needs, especially of immediate concern. During such situations they made an attempt to respond to them in the best possible way with given constraints.

Consequences to the field researchers: Participating in this large-scale community-based surveys exposed them to the ground realities vis-à-vis people, and especially to women's deprived living situation. It was a struggle for all of us to reconcile with the stark disparities, which were beyond our control to address to and the research work that we were engaged in. This was because, people were facing myriad difficulties to earn a reasonable livelihood, meeting very basic survival needs. Field researchers found it difficult to overcome their own helplessness and to reach out to people and women with an understanding of the significance of the research. Helplessness among field researchers' was more in terms of the feeling that we would not be able to do anything tangible to improve their living conditions in immediate future. We organized debriefing sessions with field researchers to cope with this stress. Also, in the process, they were encouraged to express their frustrations in field based in-group team meetings, which helped to build a peer based coping mechanism. The advantage has been that it was available immediately and also interacting with peers allowed them to find non-hierarchical environment and to know that their teammates too are facing similar difficulties. Besides, they were also encouraged to approach the senior staff at the office to enable direct telephonic communication on these matters as and when required.

On the other hand, another challenge was to deal with field reseracher's struggles in their personal lives that could be attributed to the training imparted to them during the initial phase of the project and the insights they gathered into issues related to a range of reasons responsible for women's subjugation and her subservient position in the society. During the period of about a year they also started relating to the larger social realities and their own positions in their immediate social contexts. This was all getting translated into developing a sense of empowerment - beginning to understand their rights ans autonomy to be exercised in their personal and professional lives. Obviously while their horizons were expanding, their families attitudes were the same. They were finding it difficult then to accept decisions that their family members were taking on their behalf, especially those related to their marriages. The extent to which different filed researches experienced the transformation within themselves and tensions arising out of it varied from

individual to individual. We witnessed this transformation among women field researchers during the period that they were with us and beyond as we remained in touch. This was a rather unanticipated upshot for which we were not prepared from the point of view of ethical responsibility on part of the project/institute. Although we encouraged them to talk about their dilemmas with us as well as with their peers, it had its limitations. In the coming time, this requires attention to be paid from ethical point of view.

Data that is not used for analysis

From APR: While collecting data of the PSU, we thought of gathering data on area, population and community composition, but we did not get much reliable data on the above areas especially from urban areas. Also many times the data collected was not of the same year and thus is not comparable and thus now cannot be analysed.

From WS-IS: At present we are not looking at the association between workload during pregnancy and its subsequent miscarriage, as it is also not medically proved that heavy workload during pregnancy leads to possible miscarriage. We are also not looking into the lifetime care and cost data of pregnancy losses as we feel that the data suffer from recall lapse.

Sharing of research findings

To the research community the findings would be shared through various academic publications like research reports and by publishing papers in peer reviewed journals. To the research participants it may not be possible to bring back the findings individually. Therefore, it is thought that the findings of the study would be made into posters (it is a better option than a booklet, as participants who are non-literate would also be able to understand) and would be posted to the gram panchayat/school/ community centers of the villages that were part of the study. For urban community the findings would be disseminated widely through popular press and magazines.

Ethical review

The formal and professional institutional structures, such as, Institutional Ethics Committee (IEC) of CEHAT and Ethics Consultative Group (ECG) of Abortion Assessment Project – India (AAP-I) played critical roles in making the study ethically informed. The IEC, CEHAT has developed systematic procedural tools to facilitate ethical review of the research studies at four different stages during its entire life span using the framework of National Committee for Ethics in Social Science Research in Health (NCESSRH) guidelines. The procedural tools facilitated holistic attention to the ethical issues involved and made it possible to conceptualise the project and design the research methodology, which was ethically informed and sound. The project underwent an ethics review by the institutional ethics committee (IEC), a professional body of CEHAT (consisting of five external and three internal members) at all phases. The IEC members were called upon as and when required in the intermediate phases (Annexure IX).

2.10 SAMPLE IMPLEMENTATION

Response pattern

Table 2.1: Sample results for households and ever-married women age 15 –54 by residence, 2001- 02

Status of the interview	Rural		Urban		Total		Mumbai		Rest Urban	
	Count	Percent	Count	Percent	Count	Percent	Count	Percent	Count	Percent
Households selected	**3454**	**(100.0)**	**2272**	**(100.0)**	**5726**	**(100.0)**	**865**	**(100.0)**	**1407**	**(100.0)**
HHD Interview completed (C)	3320	(96.1)	2085	(91.8)	5405	(94.4)	752	(86.9)	1333	(94.7)
HHD with no hhd member/ competent respondent at home (HP)	15	(00.4)	43	(01.9)	58	(01.0)	24	(02.8)	19	(01.4)
HHD absent for extended period (HA)	89	(02.6)	55	(02.4)	144	(02.5)	27	(03.1)	28	(02.0)
HHD refused (R)	6	(00.2)	64	(02.8)	70	(01.2)	42	(04.9)	22	(01.6)
Dwelling vacant (DV)	13	(00.4)	3	(00.1)	16	(00.3)	2	(00.2)	1	(00.1)
Dwelling destroyed (DD)	1	(0.02)	0	(00.0)	1	(0.02)	0	(00.0)	0	(00.0)
Dwelling not found (DNF)	1	(0.03)	0	(00.0)	1	(0.02)	0	(00.0)	0	(00.0)
Listing problems (LP)	8	(00.2)	5	(00.2)	13	(00.2)	3	(00.3)	2	(00.1)
Access denied (AD)	0	(00.0)	14	(00.6)	14	(00.2)	14	(01.6)	0	(00.0)
HHD Incomplete-withdrawal/ partly interviewed (HPC)	1	(00.0)	3	(00.1)	4	(00.0)	1	(00.1)	2	(00.1)
Total	**3454**	**[100]**	**2272**	**[100]**	**5726**	**[100]**	**865**	**[100]**	**1407**	**[100]**
Households occupied	**3343**	**(100.0)**	**2209**	**(100.0)**	**5552**	**(100.0)**	**833**	**(100.0)**	**1376**	**(100.0)**
Households interviewed	3320	(99.3)	2085	(94.4)	5405	(97.4)	752	(90.3)	1333	(96.9)
Households not interviewed	23	(00.7)	124	(05.6)	147	(02.6)	81	(09.7)	43	(03.1)
Household response rate (HRR)[1]	**NA**[2]	**(99.3)**	**NA**	**(94.4)**	**NA**	**(97.4)**	**NA**	**(90.3)**	**NA**	**(96.9)**
Eligible Women[3]	**3936**	**(100.0)**	**2382**	**(100.0)**	**6318**	**(100.0)**	**813**	**(100.0)**	**1569**	**(100.0)**
Women interviewed (EWC)	3589	(91.2)	2123	(89.1)	5712	(90.4)	704	(86.6)	1419	(90.4)
Women not at home (EWNH)	311	(07.9)	209	(08.8)	520	(08.2)	87	(10.7)	122	(07.8)
Women refused (EWR)	15	(00.4)	36	(01.6)	51	(00.8)	16	(02.0)	20	(01.3)
Women partly interviewed / incomplete-withdrawal(EWPC)	5	(00.1)	4	(00.2)	9	(00.1)	1	(00.1)	3	(00.2)
Other (EWO)	1	(00.2)	3	(00.1)	4	(0.06)	1	(00.1)	2	(00.1)
Women unable to interview bec.ill/ physical problem(EWIH)	15	(00.4)	7	(00.3)	22	(00.3)	4	(00.5)	3	(00.2)
Total	**3936**	**[100]**	**2382**	**[100]**	**6318**	**[100]**	**813**	**[100]**	**1569**	**[100]**
Eligible women's response rate (EWRR)[4]	**NA**	**(91.2)**	**NA**	**(89.1)**	**NA**	**(90.4)**	**NA**	**(86.6)**	**NA**	**(90.4)**
Overall response rate (ORR)[5]	**NA**	**(90.6)**	**NA**	**(84.1)**	**NA**	**(88.0)**	**NA**	**(78.2)**	**NA**	**(87.6)**

[1] Using the number of households falling into specific response categories, the household response rate (HRR) is calculated as:

$$HRR = \frac{C}{C+HP+R+DNF+AD+HPC} \times 100$$

[2] NA: Not applicable; HHD: household

[3] Eligible women are defined as ever-married women age 15-54 who stayed in the household the night before the interview (including both usual residents and visitors.)

[4] Using the number of eligible women falling into specific response categories, the eligible women response rate (EWRR) is calculated as:

$$EWRR = \frac{EWC}{EWC+EWNH+EWR+EWPC+EWO+EWIH} \times 100$$

[5] The overall response rate (ORR) is calculated as:

$$ORR = \frac{HRR \times EWRR}{100}$$

The data was collected between September 2001 and March 2002. Often, it is not possible to cover the sample entirely for a range of reasons. In case of inclusion of sampled households, there may be pragmatic reasons, such as, 'not found', 'vacant'. In case of individuals, 'refused to participate', couldn't meet despite multiple visits', 'withdrew halfway through' may be the various reasons for not able to cover the entire sample. In this context, it is important to record the response rate at both levels, households and individual research participants, the reasons for exclusion, and if possible the profile of individuals who refused to participate in the research.

Table 2.1 presents the results of household and interviews, response rates for the survey, and reasons for non-response. Of the total 5,726 sampled households from Maharashtra, we could include 5,405, giving the response rate of 94 per cent. Of the rest, for about 1 per cent of households there was no competent person to participate in the study, for about 3 per cent households such persons were away for extended period and in case of about 1 per cent households, the concerned persons did not want to participate in this research. The response rate in rural area has been much better (96.1%) compared to urban area (91.8%). The same is true with refusals. It was very marginal in rural areas (0.2%) compared to urban area (2.8%). There were no instances of withdrawals from participation halfway through in the entire sample. The household response rate, defined as the number of households interviewed per 100 occupied households, has been 97 per cent.

The patterns of sample loss and refusals in Mumbai standout, when the data from urban areas of the state is divided into Mumbai and rest of the urban areas. The response rate of Mumbai is only 90 per cent as against 97 per cent for the rest of the urban areas of the state. This low response rate is mainly due to the refusal to give interviews. Another unique problem that we faced in Mumbai, is denial of access to households by watchman in certain PSUs in Mumbai. Also not finding any competent member for interview is also very high in Mumbai (2.8%) as compared to other urban or rural areas. Thus, the contribution of Mumbai to the total sample loss and refusal is substantial.

In the interviewed households, 6,318 women were identified as eligible for the interview (table 2.1). Of these we could complete interviews with 5,712 women, giving the response rate of 90 per cent. However, of the total eligible women, 520 (8.2%) were not at home and 22 (0.3%) could not be interviewed because of either they were ill or not in position to interview. The women who refused to participate in the study constituted about 0.8 per cent and about 0.1 per cent of the total eligible women either withdrew or could not complete the interview for some pragmatic reasons. However, if women who were not found to be at home are excluded from the denominator, the response rate improves to 99 per cent.

More or less this same pattern exhibited in the case of households emerges in case of Mumbai. The sample loss because of 'women not found at home' is 10.7 per cent, the highest among the sub categories of population. Also the refusal among women from Mumbai is as high as 2.0 per cent. Thus, Mumbai population has contributed the most to both, the total sample loss and total refusals as regards eligible women's participation in this study.

The total number of eligible women from 5405 interviewed households in the sample is 6318. This turns out to be 1.17 eligible women per household, which is close to 1.2 the assumption on which sample household size was determined.

The data show that about 70 (69.7%) per cent of the households are with one eligible women; about 16 (15.5%) per cent are with two eligible women. About 10 per cent (9.9%) of the households were with no eligible women. The maximum number of eligible women found at one single household was 7 and there was only one such household

Recording of consent

As mentioned earlier we used three types of protocols for three sets of data collection in this study. Of these, informed consent was sought from research participants who responded to household interview schedule and to woman's interview schedule. In case of the former, research participants were both men and women whereas in case of the latter, they were only women. As mentioned earlier about the positive response that we received during pilot test regarding written informed consent, we decided to seek written consent from research participants. But although the research participants were requested for written informed consent, all had the choice to opt for verbal informed consent. We recorded the type of consent given in an attempt to analyse the patterns of variation, if any. Based on the type of consents recorded in this survey, they are classified in two major categories – written and verbal. In rare instances, written consent was given post interview on the grounds that they wanted to know the detailed content of the interview schedule, that is, type of information that were being gathered from them. But for the purpose of the survey we considered them as verbal consent. In case of verbal consent, we recorded reasons for doing so. Below is the presentation of the data on the type of the informed consent given by the two categories of the research participants mentioned above.

Research participants who gave household level information: A vast majority (95%) of the research participants gave written informed consent and the rest five per cent opted for verbal informed consent. The rural-urban differentials are quite clear. In that, except a small number (1.7%) the rest (98.3%) in rural areas gave written informed consent. In case of urban areas, 10 per cent and 90 per cent respectively opted for verbal and written consent. When the data of Mumbai and rest of the urban areas is separately seen, we see a considerable difference with 81 per cent of research participants in Mumbai opting for written consent as against 95 per cent for the rest of urban areas.

Table 2.2: Type of consent given by research participants for household interview schedule, 2001- 02

Type of consent given	Rural	Urban	Total	Mumbai	Rest urban
Written consent - signature	1788	1531	3319	550	981
	(53.9)	(46.1)	(100.0)	(35.9)	(64.1)
Written consent - thumb print	1474	342	1816	58	284
	(81.2)	(18.8)	(100.0)	(17.0)	(83.0)
Verbal consent	58	212	270	144	68
	(21.5)	(78.5)	(100.0)	(67.9)	(32.1)
Total	3320	2085	5405	752	1333
	(61.4)	(38.6)	(100.0)	(36.0)	(64.0)
Figures in parenthesis indicates row percentage					

Of those who gave written informed consent in rural areas, little more than half (53.9%) could sign whereas the rest gave thumbprints. In case of urban areas, the majority (73.4%) could sign. In case of verbal consent, one of the prime reasons stated for doing so have been "afraid of signing any papers on account of negative experiences in the past regarding signing papers". The major reason for rural research participants being more open to give written consent as compared to their urban counterparts, may be of the better rapport that the researchers were able to make, which may be attributed to the community meetings we had in rural areas

Women research participants who responded to woman's interview schedule: A vast majority (95.4%) of the women research participants (Table 2.3) gave written informed consent as has happened in case of research participants to provide household level information. The rural-urban differentials is quite significant with 98 per cent women in rural areas opting for a written consent against 90 per cent women from urban areas. Similar to the response received for household interview, women from rest of urban areas (95%) opted more for written consent than women from Mumbai (82%).

Table 2.3: Type of consent given by women research participants for the women interview schedule, 2001- 02

Type of consent given	Rural	Urban	Total	Mumbai	Rest urban
Written consent - signature	1594	1544	3138	504	1040
	(50.8)	(49.2)	(100.0)	(32.6)	(67.3)
Written consent - thumb print	1943	387	2330	74	313
	(83.3)	(16.6)	(100.0)	(19.1)	(80.9)
Verbal consent	49	191	240	126	65
	(20.4)	(79.6)	(100.0)	(66.0)	(34.0)
Not noted by researchers	3	1	4	0	1
Total	3589	2123	5712	704	1419
	(62.8)	(37.2)	(100.0)	(33.2)	(66.8)
Figures in parenthesis indicates row percentage					

2.11 DATA CODING, ENTRY, VALIDATION AND ANALYSIS

We used the conventional method of transferring the data on coding sheets in matrix form before it was entered in computer for analysis. Data entry was done through programme designed especially for the purpose. The idea of completing the data entry through programming was to achieve validation of the data using the logical linkages among various variables from various sections across in and across the two protocols we used for data collection. However, we also implemented the methods of random manual checks for the data from household interview schedules and a more thorough one-to-one basis check for data from women's interview schedules. We used computer software packages to analyse data. Both, descriptive statistics as well as analytical statistical procedures were used as per our requirements. Weights were applied while analyzing the data.

2.12 LIMITATIONS OF THE STUDY

There are two notable limitations of the study, one being not able to estimate true induced abortion rate, as we have not included unmarried women in our study. We assume that the incidence among induced abortion among unmarried is not negligible. Further, we also have not captured those incidences of abortion where there has been a case of maternal mortality, which in our country is not very negligible.

Findings

CHAPTER 3

PROFILE OF THE SAMPLE

3.1 INTRODUCTION

The chapter presents profiles of the sampled households, population, heads of households and the research participants, both who participated by responding to household interview schedule and those who responded to woman's interview schedule. The research participants who responded to household interview schedules were both men and women whereas those who responded to woman's interview schedule were ever-married women age 15-54 years. It presents the demographic and socio-economic profiles of the sampled population and households, which provides context for the analyses of the data presented in this report on the core themes, such as, abortion incidence, care and cost. It presents data on household composition in terms of family size, sex composition; background characteristics of heads of households; access to basic amenities, such as, water, fuel, electricity, bathing place and toilet facilities; ownership of durable goods; land ownership and standard of living index (SLI), which is a composite index constructed as a proxy for socio-economic status of the households. The chapter also contains a brief profile of the study area. This section uses sampled households and *dejure* population as units of analysis.

3.2 AGE AND SEX DISTRIBUTION OF HOUSEHOLD POPULATION

In this section, data at the level of individual members of the households/family are used. The sampled population has been treated as the denominator for the analysis. This is primarily to understand its demographic profile to give a representative picture of the state.

The age distribution of Maharashtra is typical of high fertility, with a larger proportion of the population in the younger and older age group (Table 3.1). The decrease in the proportion of the population in age groups 1-4 years and 5-9 compared to 10-14 years and again with 15-19 is indication of recent decline in fertility. Overall these trends match with those reflected in other statewide surveys like NFHS-2.

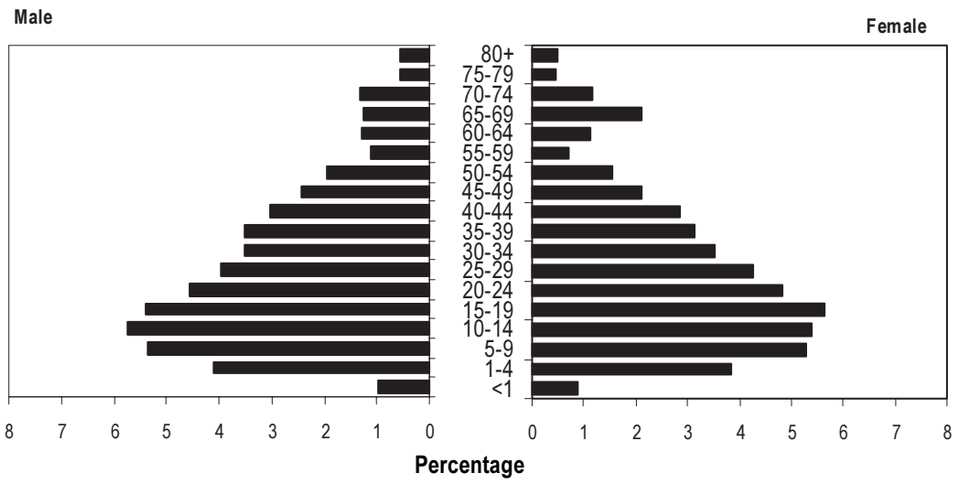
Table 3.1 Per cent distribution of the household population by age, according to residence and sex, 2001- 02.

Age(in years)	Rural			Urban			Total		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
Less than one	01.9	01.8	01.9	01.9	01.8	01.9	01.9	01.8	01.9
1-4	08.8	08.5	08.7	06.9	06.5	06.7	08.1	07.8	07.9
5-9	11.6	11.7	11.6	09.0	09.1	09.0	10.6	10.7	10.7
10-14	11.8	11.5	11.7	10.5	09.8	10.2	11.3	10.9	11.1
15-19	10.4	10.7	10.6	11.0	12.5	11.8	10.6	11.4	11.0
20-24	08.0	09.1	08.6	10.7	10.8	10.7	09.0	09.7	09.4
25-29	07.4	08.5	07.9	08.7	08.8	08.8	07.9	08.6	08.2
30-34	06.3	07.0	06.6	08.0	07.5	07.7	06.9	07.2	07.0
35-39	06.9	05.8	06.4	06.9	07.3	07.1	06.9	06.3	06.6
40-44	05.9	05.5	05.7	06.2	06.3	06.2	06.0	05.8	05.9
45-49	04.4	03.7	04.1	05.5	05.3	05.4	04.8	04.3	04.6
50-54	03.4	03.0	03.2	04.5	03.3	03.9	03.8	03.1	03.5
55-59	02.0	01.2	01.6	02.6	01.8	02.2	02.2	01.4	01.8
60-64	02.7	02.4	02.6	02.2	02.0	02.1	02.5	02.3	02.4
65-69	02.9	04.9	03.9	01.9	03.2	02.5	02.5	04.3	03.4
70-74	03.2	02.6	02.9	01.5	01.9	01.7	02.6	02.4	02.5
75-79	01.1	00.8	01.0	01.0	01.1	01.0	01.1	00.9	01.0
80+	01.2	01.0	01.1	00.9	01.0	00.9	01.1	01.0	01.1
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number of persons	8588	8410	17002	5132	4980	10121	13720	13390	27123
Sex Ratio	***NA***	***NA***	***979***	***NA***	***NA***	***970***	***NA***	***NA***	***976***

The above figures are column percentages

Note: There are 13 cases of third gender, which are excluded from analysis.

Figure 3.1 Population pyramid, 2001-02



The single-age distribution by sex in the population (Table 3.2) indicates that there is substantial misreporting of ages, which is reflected through considerable preference for ages ending in particular digits, especially 0 and 5. The patterns of age reporting for males and females for age between 15-60 are conspicuously different. We can attribute this to the method used to arrive at more accurate age for women between 15-60

years. The digit preference for ages ending with 0 and 5 is very obvious in case of men. One of the most commonly used measures of digit preference in age reporting is Myers' Index.[1] This index is often used as one indicator of the quality of age reporting on a survey. Values of Myer's index computed for the household population are 30.38 for males and 12.80 for all females. These values indicate better reporting of age in this survey, and the reporting was better for females than for males. In NFHS-2, the values of Myer's index for males were 16.1 and 14.4 for females for the age range 10-69.

Table 3.2 Single-year age per cent distribution of household population by sex, 2001- 02

Age	Male	Female	Total	Age	Male	Female	Total
< 1	1.9	1.8	1.9	37	0.3	1.0	0.7
1	1.9	1.7	1.8	38	0.8	1.1	0.9
2	2.0	1.9	2.0	39	0.3	1.1	0.7
3	2.1	2.1	2.1	40	4.1	1.6	2.9
4	2.0	2.0	2.0	41	0.3	1.1	0.7
5	2.3	2.2	2.2	42	0.9	1.1	1.0
6	2.3	2.1	2.2	43	0.3	1.1	0.7
7	2.1	2.3	2.2	44	0.3	1.0	0.6
8	2.0	2.3	2.1	45	3.2	1.2	2.2
9	1.9	1.9	1.9	46	0.4	0.8	0.6
10	2.5	2.6	2.6	47	0.3	0.8	0.6
11	1.9	2.1	2.0	48	0.6	0.7	0.7
12	2.8	2.6	2.7	49	0.3	0.7	0.5
13	2.0	1.8	1.9	50	2.6	1.1	1.9
14	2.2	1.8	2.0	51	0.3	0.5	0.4
15	2.1	1.8	2.0	52	0.5	0.5	0.5
16	2.3	2.4	2.3	53	0.2	0.5	0.4
17	1.7	1.9	1.8	54	0.3	0.5	0.4
18	3.0	3.1	3.0	55	1.4	0.8	1.1
19	1.6	2.1	1.9	56	0.2	0.2	0.2
20	2.5	2.5	2.5	57	0.2	0.1	0.1
21	1.7	1.8	1.7	58	0.2	0.2	0.2
22	2.3	2.0	2.1	59	0.2	0.1	0.1
23	1.5	1.7	1.6	60	1.9	1.3	1.6
24	1.2	1.7	1.4	61	0.1	0.1	0.1
25	2.9	2.1	2.5	62	0.3	0.5	0.4
26	1.5	1.6	1.5	63	0.1	0.2	0.2
27	1.1	1.6	1.4	64	0.1	0.1	0.1
28	1.7	1.7	1.7	65	1.8	3.4	2.6
29	0.6	1.5	1.1	66	0.2	0.2	0.2
30	4.0	1.8	2.9	67	0.2	0.3	0.2
31	0.5	1.4	0.9	68	0.2	0.3	0.2
32	1.6	1.5	1.5	69	0.1	0.1	0.1
33	0.5	1.3	0.9	70	2.2	2.2	2.2
34	0.4	1.2	0.8	71+	2.5	2.2	2.3
35	4.8	1.7	3.3				
36	0.8	1.4	1.1	**Total**	**100.0 (13720)**	**100.0 (13390)**	**100.0 (27123)**

Note: There are 13 cases of third gender, which are excluded from analysis.
The above figures are column percentages
The figures in parenthesis indicate population

[1] United Nations (1955): *Methods of Appraisal of Quality of Basic Data for Population Estimates,* United Nations, New York. Myers' index provides an overall summary for preferences for, or avoidance of, of digits 0-9.

Table 3.3 presents sex ratios according to place of residence. The sex ratio in rural areas is 979 and is 970 in urban areas and for the state is 976. When the data is disaggregated by the 6 agro-climatic regions of the state, one sees a very a high sex ratio in the Konkan region, Vidharbha and the tribal belts of Chandrapur and Gadchiroli.

Table 3.3 Sex of the household population with the sex ratio, according to residence, 2001- 02.

Type of residence	Sex of the population			Sex ratio[1]
	Male	Female	Total	
Rural	8588	8410	17002	979
Urban	5132	4980	10121	970
Mumbai	1763	1675	3441	950
Rest Urban	3369	3305	6680	981
Region				
R1-GB'bay, Thane, Raigarh, Ratnagiri, Sindhudurg	3192	3140	6335	984
R2-Nashik, Dhule, Jalgaon	1839	1753	3598	953
R3-Ahmednagar, Pune, Satara, Sangli, Solapur, Kolhapur	3390	3269	6659	964
R4- Aurangabad, Jalna, Parbhani, Bid, Osmanabad, Latur, Buldhana, Akola, Amravati	2961	2863	5828	967
R5-Nanded, Yavatmal, Wardha, Nagpur	1518	1509	3027	994
R6-Bhandara, Chandrapur, Gadchiroli	820	856	1676	1044
Total	**13720**	**13390**	**27123**	**976**

There are 13 cases of third gender in the population, which are excluded.
Parenthesis figures are row percentages.
[1] Females per 1,000 males

Child sex ratio in the census is defined as sex ratio of the age group 0-6 years, computation made for the age group 0-6 years for this survey is provided in table 3.4 along with the estimates of Census and other representative surveys in Maharashtra. Though the overall sex ratio according to this study is quite high, the child sex ratio is comparable with other studies. This table also shows that the sex ratio of 0-6 year old population has declined during the decade under consideration.

Table 3.4 Sex ratio of 0-6 year old population from census and representative sample surveys

Source and year	Sex ratio
Census, 1991[1]	946
NFHS-1, 1992	946
NFHS-2, 1999	929
Census, 2001[1]	917
CEHAT, 2001	920

[1] Source: Website www.censusindia.net

3.3 MARITAL STATUS OF HOUSEHOLD POPULATION

We included information on the marital status of all household members age six and above. Table 3.5 shows the marital status distribution of the household population, classified by age, sex and residence. Among females age six and above, 54 per cent were currently married and co-habiting and 34 per cent

were never married. The same for male is 51 per cent and 46 per cent respectively showing percentage of never married male is higher than female. The proportion of never married is slightly higher in urban areas (47.5% for males and 38.3% for females) than in rural areas (45.5% for males and 33.8% for females). The proportion divorced, separated, or deserted is small in the population. Among age group 50 and above years, especially among women, there is a significant proportion of widowhood. Forty six per cent of women age 50 or more is widowed, but only 9 per cent of males in that age group are widowed. A range of factors together can explain this seemingly strange pattern. One, in our society, men is more likely to remarry compared to women. Two, male mortality rates in this age group are much higher than females. Three, as part of the socio-cultural practice, women marry men who are older.

Table 3.5 Per cent distribution of the household population age 6 and above by marital status, according to age, residence, and sex, 2001- 02

Age	Currently married	Widowed	Divorced	Separated	Never married	Total	
RURAL							
Rural – Male							
6 - 9	00.0	00.0	00.0	00.0	100.0	100.0	(775)
10 - 14	00.0	00.0	00.0	00.0	100.0	100.0	(1011)
15 - 19	01.5	00.1	00.0	00.0	98.4	100.0	(895)
20 - 24	25.0	00.0	00.0	00.6	74.5	100.0	(689)
25 - 29	71.4	00.2	00.3	01.1	27.1	100.0	(632)
30 - 49	97.2	00.8	00.0	00.6	01.4	100.0	(2026)
50+	88.6	09.9	00.0	01.0	00.6	100.0	(1420)
Total	**51.9**	**02.1**	**00.0**	**00.5**	**45.5**	**100.0**	**(7448)**
Rural- Female							
6 - 9	00.0	00.0	00.0	00.0	100.0	100.0	(793)
10 -14	00.4	00.0	00.0	00.0	99.6	100.0	(970)
15 -19	36.1	00.1	00.0	01.2	62.5	100.0	(902)
20 - 24	82.2	00.9	00.8	03.8	12.4	100.0	(768)
25 - 29	92.9	01.8	00.6	02.1	02.6	100.0	(717)
30 - 49	89.1	07.6	00.2	02.6	00.5	100.0	(1847)
50+	53.2	44.5	00.1	02.1	00.1	100.0	(1355)
Missing	00.0	00.0	00.0	00.0	00.0	100.0	(1)
Total	**54.3**	**10.4**	**00.2**	**01.8**	**33.8**	**100.0**	**(7353)**
Rural – Total							
6 - 9	00.0	00.0	00.0	00.0	100.0	100.0	(1568)
10 - 14	00.2	00.0	00.0	00.0	99.8	100.0	(1981)
15 - 19	18.9	00.1	00.0	00.6	80.4	100.0	(1797)
20 - 24	55.1	00.5	00.4	02.3	41.7	100.0	(1457)
25 - 29	82.8	01.0	00.4	01.6	14.1	100.0	(1349)
30 - 49	93.9	04.0	00.1	01.5	01.0	100.0	(3873)
50+	71.3	26.8	00.0	01.5	00.4	100.0	(2775)
Missing	00.0	00.0	00.0	00.0	00.0	100.0	(1)
Total	**53.1**	**06.2**	**00.1**	**01.1**	**39.4**	**100.0**	**(14801)**
URBAN							
Urban – Male							
6 - 9	00.0	00.0	00.0	00.0	100.0	100.0	(359)
10 - 14	00.0	00.0	00.0	00.0	100.0	100.0	(541)
15 - 19	00.7	00.0	00.0	00.2	99.1	100.0	(566)

20 - 24	17.1	00.0	00.0	00.2	82.8	100.0	(551)
25 - 29	61.3	00.0	00.2	00.4	38.0	100.0	(447)
30 - 49	93.3	00.5	00.0	00.4	05.7	100.0	(1360)
50+	90.7	07.9	00.4	00.1	00.9	100.0	(750)
Total	**50.7**	**01.4**	**00.1**	**00.2**	**47.5**	**100.0**	**(4574)**
Urban – Female							
6 - 9	00.0	00.0	00.0	00.0	100.0	100.0	(353)
10 - 14	00.0	00.0	00.0	00.0	100.0	100.0	(489)
15 - 19	20.0	00.0	00.0	00.2	79.8	100.0	(624)
20 - 24	58.7	00.9	00.7	00.2	39.5	100.0	(537)
25 - 29	86.5	02.7	00.7	01.6	08.4	100.0	(438)
30– 49	87.0	08.8	00.8	01.6	01.8	100.0	(1312)
50+	49.6	48.2	00.0	00.8	01.3	100.0	(713)
Total	**51.8**	**10.7**	**00.4**	**00.8**	**36.3**	**100.0**	**(4466)**
Urban – Total							
6 - 9	00.0	00.0	00.0	00.0	100.0	100.0	(712)
10 - 14	00.0	00.0	00.0	00.0	100.0	100.0	(1030)
15 - 19	10.8	00.0	00.0	00.2	89.0	100.0	(1190)
20 - 24	37.6	00.5	00.4	00.2	61.4	100.0	(1088)
25 - 29	73.8	01.4	00.5	01.0	23.4	100.0	(885)
30 - 49	90.2	04.6	00.4	01.0	03.8	100.0	(2672)
50+	70.7	27.5	00.2	00.5	01.1	100.0	(1463)
Total	**51.3**	**06.0**	**00.2**	**00.5**	**42.0**	**100.0**	**(9040)**
			TOTAL				
Total – Male							
6 - 9	00.0	00.0	00.0	00.0	100.0	100.0	(1134)
10 - 14	00.0	00.0	00.0	00.0	100.0	100.0	(1552)
15 - 19	01.2	00.1	00.0	00.1	98.7	100.0	(1461)
20 - 24	21.5	00.0	00.0	00.4	78.1	100.0	(1240)
25 - 29	67.2	00.1	00.3	00.8	31.6	100.0	(1079)
30 - 49	95.6	00.7	00.0	00.5	03.1	100.0	(3386)
50+	89.3	09.2	00.1	00.7	00.7	100.0	(2170)
Total	**51.4**	**01.9**	**00.1**	**00.4**	**46.2**	**100.0**	**(12022)**
Total – Female							
6 - 9	00.0	00.0	00.0	00.0	100.0	100.0	(1146)
10 - 14	00.3	00.0	00.0	00.0	99.7	100.0	(1459)
15 - 19	29.6	00.1	00.0	00.8	69.6	100.0	(1526)
20 - 24	72.5	00.9	00.8	02.3	23.5	100.0	(1305)
25 - 29	90.5	02.2	00.6	01.9	04.8	100.0	(1155)
30 - 49	88.2	08.1	00.5	02.2	01.0	100.0	(3159)
50+	52.0	45.8	00.0	01.6	00.5	100.0	(2068)
Missing	00.0	00.0	00.0	00.0	00.0	100.0	(1)
Total	**53.4**	**10.5**	**00.3**	**01.4**	**34.4**	**100.0**	**(11819)**
Total							
6 – 9	00.0	00.0	00.0	00.0	100.0	100.0	(2280)
10 - 14	00.1	00.0	00.0	00.0	99.9	100.0	(3011)
15 - 19	15.7	00.1	00.0	00.4	83.8	100.0	(2987)
20 - 24	47.6	00.5	00.4	01.4	50.1	100.0	(2545)
25 - 29	79.2	01.2	00.4	01.4	17.8	100.0	(2234)
30 - 49	92.1	04.3	00.2	01.3	02.1	100.0	(6545)
50+	71.1	27.0	00.1	01.2	00.6	100.0	(4238)
Missing	00.0	00.0	00.0	00.0	00.0	100.0	(1)
Total	**52.4**	**06.1**	**00.2**	**00.9**	**40.4**	**100.0**	**(23841)**

The above figures are row percentages
The figures in parenthesis indicate population

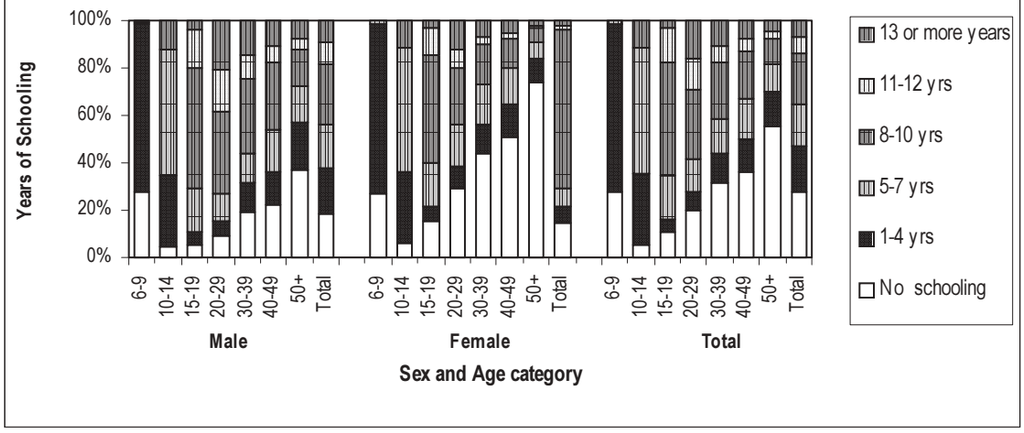
Young women and men exhibit different pattern of marital status. At age 15-19 years, the proportions ever married are 1 per cent for males and 30 per cent for females (1.2% for males and 37.5% for females in rural areas and 0.9% and 20.2% for females in urban areas). By age 25-29 years, 95 per cent of women have ever been married (97.4% in rural and 91.6% in urban areas). In contrast, only 68 per cent of males in this age group have ever been married (72.9% in rural and 62.0% in urban areas). Overall, data show that women in Maharashtra marry at a much younger age than men, and that both men and women marry at younger ages in rural areas than in urban areas.

Of those who have been ever married, a very small proportion (2.8%) reported more than one marriage. Of those who married more than once, more than 75 per cent are men. The data does not show any considerable difference among various religions about the practice of remarriage.

3.4 EDUCATIONAL ATTAINMENT OF HOUSEHOLD POPULATION

Educational attainment is an important indicator of social development. It tends to impact positively many of the aspects of reproductive behaviour along with many other aspects of life. Figure 3.2 presents the extent of literacy and level of education of the population age 6 and above by age and sex.

Figure 3.2 Per cent distribution of the household population age 6 and above by literacy and level of education, according to age, by sex, 2001-02.



Annexure X gives a detailed description of educational attainment by place of residence, sex and age groups. The gender and rural-urban inequities in educational attainment continue to be sharp despite a much higher school attendance rate among the younger age groups. There has been steady progress in enrollment over time, as indicated by differentials in schooling by age. Thirty seven per cent of females and 18 per cent of males from the population have never been to school. These levels of no schooling are

slightly lower than those recorded in NFHS 2, Maharashtra, (1998-99), which recorded 39 per cent for females and 17 per cent for males. Overall no schooling is twice higher in rural areas and amongst women and in both categories the gap gets wider for higher levels of educational attainment. The proportion of women with having completed high school (8-10 years of schooling) is 25 per cent in urban areas but is 13 in case of rural areas. Thus the urban-rural differentials prevail for both, men and women, although they are more pronounced in case of women than men.

3.5 BACKGROUND CHARACTERISTICS OF HEADS OF HOUSEHOLDS

Table 3.6 show that of the total sampled households female members head 12 per cent of the households. It is slightly more in case of urban areas than in rural areas. A larger proportion of heads of the households has been of the age between 30 and 59 years. The pattern of distribution of heads of the households on classified age categories across the residence has been more or less the same. In that, about one fourth (rural) and one fifth (urban) have been of age 60 years or older persons and only 9 per cent were younger people less than age 30 years. Regardless of the residence, that is rural or urban, a large majority of heads of the households is married. Data show that around 40 per cent of the heads of households from the rural area were without any schooling. Only about 9 per cent had education more than 10^{th} standard. The trend was reverse in case of urban areas. It was only less than one-fifth (16.9%) who was without any schooling whereas a little more than a quarter (26.7%) had schooling of more than 10^{th} standard. Almost one-third (32.3%) had about 8-10 years of schooling and one-fifth had 13-15 years of schooling unlike the rural based heads of households. Thus, rural-urban differentials as regards level of education of heads of the households are clearly seen. As far as religion is concerned, the majority (84.3%) of the heads of the household stated Hindu as their religion; 8 per cent said Muslim and another 5 per cent stated to be neo Buddhist. Others, such as Jains, Sikhs, Christians and some others constituted the rest of the 3 per cent of the heads of the households. What is significant to note is that there is considerable rural-urban difference in terms of non-Hindu households, with around 24 per cent staying in urban areas as against 10 per cent in rural areas. In terms of caste of the heads of the household, more than half of them are from dominant peasant proprietor and other backward caste category. Around 12 per cent of the heads of the household were from scheduled tribe category, with a considerable rural-urban difference.

Family size ranged from 1 to 37. However, family size of about 80 per cent of the households ranged from one to six. Of these about 41.5 per cent of the households were with 4 or 5 family members. The mean household size is 5.02 persons, 5.12 in rural areas and 4.85 in urban areas.

Table 3.6 Per cent distribution of households by selected characteristics of household head and household size, according to residence, 2001- 02

Characteristics of household head	Rural	Urban	Total	Mumbai	Rest urban
Sex					
Male	88.7	86.7	87.9	85.4	87.4
Female	11.3	13.2	12.0	14.5	12.5
Third gender	00.0	00.1	00.0	00.1	00.1
Age (in years)					
<30	09.2	08.7	09.0	06.5	09.9
30 – 44	38.6	39.9	39.1	35.6	42.2
45 – 59	25.2	31.4	27.5	36.7	28.4
60+	27.0	20.1	24.4	21.1	19.5
Median age	44.6	44.5	44.6	45.9	42.8
Current marital status					
Currently married	87.7	84.5	86.5	83.2	85.1
Widowed	09.9	12.4	10.9	14.4	11.3
Divorced	00.1	00.1	00.1	00.1	00.2
Separated / Deserted	01.0	00.8	00.9	00.4	01.0
Never married	01.3	02.2	01.6	01.7	02.4
NA (third gender)	00.0	00.1	00.0	00.1	00.1
Years of schooling					
No schooling	39.5	16.9	30.8	12.1	19.6
1 - 4 yrs of schooling	18.7	10.1	15.4	06.1	12.4
5 - 7 yrs of schooling	16.0	14.0	15.2	16.1	12.8
8 – 10 yrs of schooling	16.9	32.3	22.8	39.1	28.4
11 – 12 yrs of schooling	05.1	09.6	06.8	10.9	08.9
13 – 15 yrs of schooling	02.4	10.3	05.5	10.6	10.1
16 + yrs of schooling	01.4	06.7	03.5	05.0	07.8
Missing /Can't say / don't know	00.0	00.1	00.1	00.1	00.2
Religion					
Hindu	89.4	76.3	84.3	76.6	76.1
Muslim	05.2	13.7	08.5	08.9	16.4
Sikh	00.0	00.4	00.2	00.8	00.2
Buddhist/Neo Buddhist	04.5	04.6	04.6	05.9	03.8
Jain	00.6	02.4	01.3	02.8	02.1
Christian	00.2	02.4	01.0	04.5	01.2
Religion not reported	00.0	00.3	00.2	00.5	00.2
Social groups					
Upper castes[2]	02.0	14.1	06.6	16.3	12.9
Dominant peasant proprietors	39.5	25.3	34.0	27.1	24.3
Other backward castes	20.8	20.4	20.7	14.2	23.9
Scheduled castes	10.8	08.2	09.8	09.4	07.5
Scheduled tribes	15.9	04.9	11.7	03.5	05.7
Caste that could not classified	00.3	02.8	01.3	05.1	01.6
Non - Hindus	10.7	24.3	15.9	24.4	24.2

[2] Upper caste means those castes like Brahmins, rajputs, vaishya, etc and Dominant Peasant Proprietors mostly included Marathas.

Number of usual members					
1	03.9	03.5	03.7	02.9	03.9
2	08.7	07.0	08.0	07.6	06.7
3	11.5	14.8	12.8	17.2	13.5
4	19.1	24.2	21.1	27.4	22.4
5	19.9	21.1	20.4	21.3	21.0
6	15.2	13.2	14.5	11.4	14.3
7	09.5	06.2	08.2	05.2	06.8
8	04.7	04.1	04.5	03.7	04.4
9+	07.5	05.7	06.8	03.3	07.1
Mean household size	5.12	4.85	5.02	4.58	5.01
Total	**100.0(3320)**	**100.0(2085)**	**100.0(5405)**	**100.0(752)**	**100.0(1333)**
The above figures are column percentages *The figures in parenthesis indicate number of households*					

Relationship of the research participant with head of household

In the case of 35 per cent of the households, research participants were heads of the households themselves. In another 46 per cent (45.9%) spouses of the head of the households were the research participants and in about 9 per cent (9.3%) of the households, research participants were children (son/daughter) of the head of the households.

3.6 HOUSING CHARACTERISTICS

In this cross-sectional survey with abortion incidence, care and cost as its core research themes, we collected information on various housing characteristics. They are electricity; availability of water and its source and ownership; type of cooking fuel; and sanitation facilities. Table 3.7 provides data on these housing characteristics by residence.

Electricity: Overall, a large majority (85.5%) of households had electricity, although with rural (77%) – urban (96%) differentials. When the data from urban areas is further disaggregated, almost 99 per cent of households in Mumbai had electricity as against 94 per cent for rest of urban areas.

Water: Taps, tube wells/hand pumps/bore wells, well/water storage tanks, rivers/ponds were the various sources of water for the study population. For a majority of households (67.4%), the source of water has been tap; for 14 and 18 per cent of households it has been well/tanks and tubewell/handpump/borewells respectively and about one per cent of the households fetch water from sources like rivers/ponds/lakes. The rural-urban differentials are sharp. For example, while only 50.5 per cent of rural households are fortunate to have tap water, it is 94 per cent in urban areas. This pronounced differentiation remains for other sources of water in favour of urban areas. About 57 per cent of the households used public sources. Of those who did not own the source of water, the majority (77.7%) has been from rural areas.

Time required for fetching water: We additionally gathered information about the time required to fetch drinking water. Overall, fetching water in rural areas, regardless of type of source of water appears to be more time consuming and thus also labour intensive than urban areas. The time required to fetch water (one trip) in case of 31 per cent of rural households was reported to be more than 15 minutes. In case of urban

area it has been about 5 per cent and in case of Mumbai it is only 1 per cent. A large majority (77.3%) of urban-based households did not require spending any time to fetch water, which was true in case of only 31 per cent of the rural based households. When the urban areas are differentiated into Mumbai and rest of urban areas we find that 94 per cent of households did not have to spend any time in fetching water against 68 per cent for rest of urban areas.

Type of cooking fuel: We gathered data on type of cooking fuels used and on other related aspects of it. Wood seems to be the most commonly (54.2%) used fuel for cooking. It is mostly labour intensive, that is, it required labour to fetch it. The second most commonly (31.8%) used fuel is liquid petroleum gas. The rural-urban differentials are quite pronounced in case of the both – wood and liquid petroleum gas. In that, 80 per cent of the rural households use wood, which is labour intensive; whereas 65 per cent of the urban households used liquid petroleum gas. Similarly, we find pronounced differentials across Mumbai and rest of urban areas in terms of use of wood and liquid petroleum gas. A negligible percentage of the total households used various other types of cooking fuel, such as, cow dung cake, charcoal, electricity, and biogas. Their use either in urban or rural areas seem to be specific to its availability and a comparative cost involved in its use. For example, fuel in the form of cow dung cakes has been in use in rural areas; kerosene is used by higher percentages of urban-based population.

We collected data on the distance people had to travel using the labour intensive modes, such as walking and carrying the head loads of fuel woods and cycling to fetch fuel for cooking and who in the family fetched fuel. As presented earlier, in case of urban area a whopping majority (87%) used cooking fuel, which by nature is not labour intensive while the same is only about one third (18%) in case of rural population. The data show that about 62 per cent of the households from rural areas which use fuel wood had to travel a distance of about 2 km or less for collecting fuel wood, about 31 per cent households had to travel a distance of more than 2 km to 5 km s and about 7 per cent of the households reported that they had to walk more than 5 km.

The fact that a large majority of the rural based households rely on labour intensive cooking fuel, it was logical to know as who from the family were involved in this labour intensive household chore necessary to sustain households. In about 58 per cent of the rural based households which use labour intensive cooking fuel women are engaged in fetching labour intensive fuel while in case of only 17 per cent households it was reported that men have been engaged in this task, while in the rest both men and women were engaged in this work.

Bathroom facility: Of the total sampled households from the state, only about half (51.1%) had place for bathing inside their houses. The rural-urban differentials are conspicuous. In that, almost three-fifths of the rural households had bathing places outside of their houses, which is little more than two-fifths in case of urban households. In case of urban areas, in Mumbai 94 per cent of the households have bathrooms inside as against only 65 per cent in case of rest of urban areas.

Toilet facility: Three-fifths of the sampled households from the entire state of Maharashtra were without any toilet facility. Of the total rural households, more than four-fifths (86.4%) were without any toilet facility. Only little more than one-tenth (10.7%) of the rural households had flush toilets. What is significant to note is that community toilet and shared toilet facility is a more common feature in Mumbai than in rest of urban areas.

Construction of house: We collected data on the material that had been used for making houses. The types of houses were determined depending upon type of material used for roof, walls and floor. If the houses are entirely constructed of *kuccha* material, such as, thatched material, cloth, sack in case of roof and walls and of mud/or cow dung in case of floors they were considered *kuccha* houses. As against this, if *kuccha* material was used either for roof or walls or floors, they were considered semi-*kuccha/pucca* houses. And the rest, which were constructed using material, like cement/bricks for walls and roofs and cement/koba, shahabadi or polished tiles for flooring were considered pucca houses. The data show that about half (48.5%) of the households were semi *pucca/kuccha* and about half were pucca (49.8%) and only a negligible percentage (1.7%) of households were entirely *kuccha*. Eighty seven per cent of households in urban area live in *pucca* houses as against 26 per cent in rural areas.

Persons per room: Crowded housing condition is an indicator of the poor quality of life. Eighty eight per cent of households in the state live in houses with three or more persons per room. About 19 per cent of households live in houses with 7 or more persons per room. Mean number of persons per room for rural areas is more than in urban areas.

Table 3.7 Per cent distribution of households by basic amenities, according to residence, 2001- 02

Types of amenities	Rural	Urban	Total	Mumbai	Rest urban
Electricity					
Yes	77.3	96.1	85.5	98.9	94.4
No	22.7	03.9	15.5	01.1	05.6
Source of drinking water					
Tap/pipe	50.5	94.3	67.4	100.0	91.1
Well/taki	20.5	02.6	13.6	00.0	04.1
Tubewell/handpump/borewell	27.4	02.9	18.0	00.0	04.6
River/pond/lake	01.4	00.0	01.4	00.0	00.2
Other	00.1	00.1	00.1	00.0	00.0
Time required to fetch drinking water					
Percentage 0 minutes	30.9	77.3	48.8	94.0	67.8
Percentage 1-14 minutes	38.0	18.1	30.3	04.5	25.8
Percentage >=15 minutes	31.1	04.6	20.9	01.5	06.4
Median time (minutes)	05.0	00.0	00.0	00.0	00.0
Main type of fuel used for cooking					
Bring food from outside	00.2	00.1	00.1	00.0	00.2
Wood	79.9	13.2	54.2	01.2	20.0
Crop residual/husk	01.2	00.1	00.8	00.0	00.2
Kerosene	04.9	20.0	10.7	25.4	17.0
Cow dung cakes	01.4	00.2	00.9	00.1	00.2
Coal/coke/lignite	00.0	00.6	00.2	00.0	00.9
Charcoal	00.2	00.7	00.4	00.0	01.1
Electricity	00.5	00.4	00.5	00.3	00.5
Liquid petroleum gas	11.2	64.7	31.8	73.0	59.9
Bio-gas	00.7	00.0	00.5	00.0	00.1
Bathroom facility					
No bathroom	02.9	01.1	02.2	0.8	01.3
No, outside the house	61.4	23.2	46.7	4.8	33.6
Yes, inside the house	35.7	75.7	51.1	94.4	65.1
Sanitation facility					
No facility	86.4	16.6	59.5	01.1	25.4
Community facility	02.0	35.3	14.8	52.1	25.8
Own pit toilet	00.9	00.3	00.7	00.3	00.3
Own flush toilet	10.7	46.1	24.4	42.7	48.1
Shared toilet (common for one floor)	00.0	01.6	00.6	03.9	00.4
Construction of house					
Kuccha house (roof wall and floor - all kaccha)	02.7	00.1	01.7	00.0	00.2
Semi-pucca (either if roof wall or floor is kucchha)	70.9	12.9	48.5	00.5	19.9
Pucca (roof, wall and floor are all pucca)	26.4	87.0	49.8	99.5	79.9
Persons per room					
<3	12.6	10.6	11.8	10.5	10.6
3 - 4	30.6	39.0	33.9	44.5	35.9
5 - 6	35.1	34.3	34.8	32.7	35.3
7+	21.7	16.1	19.5	12.2	18.2
Mean number of persons per room	05.1	04.8	05.0	04.6	05.0
Total	**100.0(3320)**	**100.0(2085)**	**100.0(5405)**	**100.0(752)**	**100.0(1333)**

The above figures are column percentages
The figures in parenthesis indicate number of households

3.7 STANDARD OF LIVING

Ownership of immovable property and livestock

Table 3.8 presents data on ownership of immovable property, which gives an overview of the economic status of the household. A large majority (83.1%) of the households reported that they owned the house they were living in at the time of interview. The data show rural-urban differentials as regards ownership of house. In that a very large majority (90.0%) of the rural based households owned the house while in case of urban areas it was little less than 75 per cent. A small proportion (16.9%) of the households said that they owned house other than they were living in. In that a larger proportion (22.4%) of the urban based households compared to rural (13.5%) ones owned some other house.

Table 3.8 Percentage distribution of household by ownership of house, agricultural land and livestock, 2001- 02

Asset ownership	Rural	Urban	Total	Mumbai	Rest urban
Ownership of house					
Yes	90.0	72.3	83.1	73.8	71.4
No	10.0	27.7	16.9	26.2	28.6
Ownership of any other house					
Yes	13.5	22.4	16.9	25.4	20.6
No	86.5	77.6	83.1	74.6	79.4
Family owing a livestock					
Yes	52.0	07.4	34.8	2.3	10.4
No	48.0	92.6	65.2	97.7	89.6
Earning from the livestock					
Yes	14.0	01.9	09.3	00.0	03.0
No	38.0	05.5	25.5	02.3	07.4
No livestock	48.0	92.6	65.2	97.7	89.6
Ownership of land					
Households having land	58.5	12.0	40.6	11.8	12.2
Jointly with other family members	10.5	09.2	10.4	09.7	08.9
No land	31.0	78.8	49.5	78.5	79.0
Total	**100.0(3320)**	**100.0(2085)**	**100.0(5405)**	**100.0(752)**	**100.0(1333)**
The above figures are column percentages *The figures in parenthesis indicate number of households*					

We gathered limited data on whether the households had any livestock. As expected, a large majority (92.6%) of the urban-based households did not have any livestock. In case of rural areas, more than half of the households had livestock and the rest did not. Of those who owned livestock, about a quarter (26.8%) said they earn from the livestock they had. And of those who earn from the livestock, about 38 per cent household said that their households couldn't sustain without these earnings. The earnings from the livestock ranged widely between Rs 40/- to Rs 1,20,000/- per annum.

Table 3.8 show that about half (49.5%) of the households did not own any land, joint or otherwise. The data show clear rural – urban differentials as regards land ownership. A large majority (78.8%) of the urban based and 31 per cent of the rural based households did not have any land. Table 3.9 shows the type and area of land owned by the household.

Table 3.9 Percentage distribution of households by type of ownership of land, according to residence, 2001- 02

Land size	Rural	Urban	Total	Mumbai	Rest urban
Total Land					
Upto 2.5 acre (Marginal)	36.7	26.3	35.5	30.3	24.1
2.5 - 5 acre (Small)	27.2	22.3	26.6	18.0	24.7
5 10 acre (Middle)	20.8	18.7	20.5	12.4	22.2
10+ acre (Large)	14.3	19.1	14.9	09.0	24.7
Couldn't state	00.8	13.5	02.2	30.3	4.3
Missing	00.3	00.0	00.2	00.0	00.0
Total	**100.0(1941)**	**100.0(251)**	**100.0(2192)**	**100.0(89)**	**100.0(162)**
Irrigated Land					
No irrigated land	62.2	53.4	61.2	43.8	58.6
Upto 2.5 acre (Marginal)	20.7	12.7	19.8	16.9	10.5
2.5 - 5 acre (Small)	10.6	11.6	10.7	07.9	13.6
5 10 acre (Middle)	04.1	04.8	4.2	01.1	06.8
10+ acre (Large)	01.7	05.2	2.1	04.5	05.6
Couldn't state	00.6	12.4	02.0	25.8	04.9
Missing	00.1	00.0	00.1	00.0	00.0
Total	100.0	100.0	100.0	100.0	100.0
Non-irrigated Land					
Irrigated only	00.0	00.0	00.0	00.0	00.0
Upto 2.5 acre (Marginal)	42.2	31.1	41.0	36.0	28.4
2.5 - 5 acre (Small)	30.7	26.3	30.2	19.1	30.2
5 10 acre (Middle)	16.4	14.7	16.2	07.9	18.5
10+ acre (Large)	09.7	14.7	10.3	07.9	18.5
Couldn't state	00.8	13.1	02.2	29.2	04.3
Missing	00.3	00.0	00.2	00.0	00.0
Total	100.0	100.0	100.0	100.0	100.0
The above figures are column percentages *The figures in parenthesis indicate number of households*					

Table 3.9 show that more than three-fifths (64%) of rural households and around half (49%) of urban households owned any type of agricultural land. When the ownership of land is differentiated by type of land, it is seen that more proportion of urban households possess irrigated land than rural areas. This is not a very bright picture for the rural households as only 6 per cent households owned irrigated land of more than 5 acres. Therefore farmers, majority of whom own marginal or small land holdings, have to depend on monsoons for their agricultural productions.

Ownership of durable goods and standard of living

The possession of durable goods and assets would broadly reflect economic level of households. Table 3.10 presents data on ownership of a range of durable assets by residence. Data show that the majority (72.5%) of the households had cot/diwan, 56.5 percent households had electric fan; 46 per cent had

chairs/tables; 48 per cent had television; and 42.5 per cent had cupboard/almirah. The modern appliances such as refrigerator (16.2%); washing machine (0.6%); are less frequently found and remain the characteristics of the urban based population. Private individual telephone lines are not yet a common facility as only a small proportion (16.6%) of the total sample households had telephones; sewing machines (12.6%). A little more than one third (34.8%) owned bicycles; a smaller proportion owned mopeds/scooters/mopeds (13.9%); and car/jeep (2.4%). Assets like computers (0.3%) were rare. Ownership of water pumps and bullock carts were mostly in rural based households and only in small proportions. A very negligible proportion of households owned agricultural related assets such as threshers (0.4%) and tractors (1%).

Table 3.10 Percentage distribution of households owning selected durable goods and type of kitchenware and the standard of living index, according to residence, 2001- 02

Asset*	**Rural**	**Urban**	**Total**	**Mumbai**	**Rest urban**
Wooden closet for milk (in kitchen)	07.0	07.2	07.1	03.7	09.2
Electric fan	38.3	85.4	56.5	96.3	79.3
Radio/transistor	29.4	69.3	44.8	84.0	61.0
Chairs/tables etc.	29.9	72.3	46.3	84.0	65.6
Mattress	35.2	77.2	51.4	86.2	72.2
Almirah/cupboard (iron)	25.0	70.3	42.5	84.2	62.4
Bed/divan/cot	64.7	85.0	72.5	87.1	83.9
Television	30.3	77.0	48.3	88.0	70.8
Telephone	04.9	35.3	16.6	50.5	26.8
Refrigerator	03.0	37.2	16.2	57.4	25.8
Sewing machine	08.1	19.8	12.6	13.6	23.3
Bullock cart	16.2	02.4	10.9	00.7	03.3
Water pump	11.7	04.0	08.7	00.5	06.0
Bicycle	32.9	37.9	34.8	21.4	47.2
Motorcycle/moped/scooter	08.4	22.6	13.9	19.3	24.5
Car/jeep	00.9	04.9	02.4	06.9	03.8
Tractor	01.3	00.6	01.0	00.0	00.9
Thrasher	00.4	00.3	00.4	00.1	00.4
Washing machine	00.2	01.2	00.6	02.7	00.5
Computer	00.0	00.6	00.3	00.9	00.5
Truck	00.0	00.0	00.0	00.0	00.1
Auto	00.4	00.5	00.5	00.5	00.5
Other eg. cooler	00.2	00.7	00.4	00.7	00.7
Type of utensils used					
Clay	00.2	00.0	00.1	00.0	00.0
Aluminum	21.8	17.4	20.1	16.6	17.8
Cast iron	00.2	00.1	00.1	00.0	00.2
Brass	00.3	00.0	00.2	00.0	00.1
Stainless Steel	77.3	82.4	79.3	83.2	81.9
Others	00.2	00.1	00.1	00.1	00.1
Standard of living index					
Low	35.9	10.1	25.9	03.3	14.0
Medium	50.0	43.3	47.4	40.2	45.1
High	14.1	46.6	26.6	56.5	41.0
Total	**100.0(3320)**	**100.0(2085)**	**100.0(5405)**	**100.0(752)**	**100.0(1333)**

**The responses were of multiple types and therefore, will not add up to 100 per cent*
The above figures are column percentages
The figures in parenthesis indicate number of households

We also collected data on the type of utensils mostly used. The data show that regardless of rural or urban area including Mumbai, a large majority of the household used stainless steel utensils. Similarly, although a small proportion of households, in both and rural (21.8%) and urban (17.4%), and in Mumbai (16.6%) and rest of urban areas (17.8%) aluminum utensils are used. The use of clay, cast iron, brass was used only among a very negligible proportion of the households in both rural and urban areas.

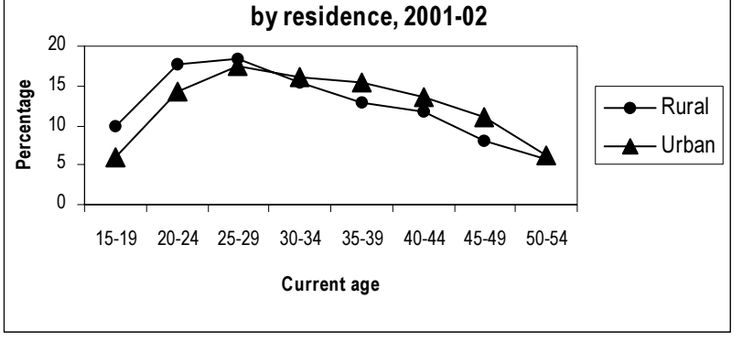
Standard of living index[3]*:* Following from NFHS surveys, we calculated standard of living index (SLI) at the household level (Annexure XI). Table 3.10 presents the values of SLI by residence and Mumbai and rest urban areas of the state. About half (47.4%) of the total sampled households fall into 'medium' category as regards the SLI scores. Of the rest, about one-quarter each falls into 'low' and 'high' SLI categories. In case of urban population, little more than two-fifths each belong to 'medium' and 'high' SLI categories; while in case of rural areas comparatively a much smaller proportion of households (14.1%) are with 'high' SLI. In case of Mumbai about two-fifths (40.2%) of the households are 'medium' SLI, and 56.5 per cent of households are 'high' SLI.

3.8 PROFILE OF WOMEN RESEARCH PARTICIPANTS

Background characteristics

Women's demographic and health care utilisation is associated with several background characteristics including their age, marital status, years of schooling, religion and caste. Table 3.11 presents the background characteristics of ever-married women age 15-54 who were identified from the household questionnaire and were eligible for interview for the women interview schedule of the study.

Figure 3.3 Age distribution of ever-married women by residence, 2001-02



Age distribution: About one-third (34.5%) of the women research participants who responded to women's interview schedule to provide information on core themes – abortion incidence, care and cost – were of age between 20 and 29 years and another about three-tenth (29.5%) belonged to the age category 30-39 years. The data do not show much rural-urban differentials on this count. However, more of the eligible women from rural area seem to be younger, that is up to age 24 years, than those from the urban area (figure 3.3). The pattern is reverse in case of older women age more than 40 years, that is more of eligible

[3] This is a composite index constructed using the data on ownership of a range of assets. Annexure XI carries a detailed note explaining itsconstruction, including the weightages assigned for each of the constituent variable/asset item.

women from urban area age 40 years and more compared to those in rural areas. Thus, in the sample in the presence study, the more of the eligible women from rural areas fall in young age categories compare to those from urban areas, whereas, more of the eligible women from urban area fall in old age category.

Marital status: A vast majority (89.5%) of the eligible women have been cohabiting with their husbands. There is not much difference across rural-urban residence. In the case of a small number (2.1%) of eligible women, husbands were staying away mostly for the purpose of work. The percentage of such women in rural areas is larger than those in urban areas and indicative of the fact that out migration of men in rural areas in search of jobs is more in rural areas compared to urban areas. About little less than one-tenth of the eligible women were wither widow, divorced, separated or deserted. There is a considerable rural urban difference in the separated and deserted category, with more women (2.6%) in rural areas being deserted in contrast to urban women (1.4%).

Educational attainment: About two-fifths of the eligible women were with no schooling and about another two-fifths were with schooling between 5 to 10 years. The rural urban differentials are conspicuous. In that, the proportion of eligible women from rural areas with no schooling is almost double the proportion in case of women from urban area. Those who could reach up to the middle level of education that is 8-10 years of schooling, in rural areas is only about little-more than one-tenth from rural areas whereas the same rises to about three-tenths in case of urban area. A small proportion (10.4%) of the women had schooling more than 11 years. The proportion of eligible women with schooling more than 11 years is almost 5 times less in rural areas compared to that in urban area. The relationship between research participants background with educational qualification is given in Annexure XII.

Occupation: As far as the occupation is concerned, what is significant to note is more than 45 per cent of the eligible women were not engaged in any gainful activity in the last 12 months preceding the survey. This proportion is much higher in urban areas (72.0%) and even higher in Mumbai (78.9%) than in rural areas (28.7%). This rural-urban difference may be due to the fact that it becomes imperative for women in rural areas to engage themselves in paid labour to run household and thus has to bear the double burden of both outside work and household work. As customary, a large proportion of women from rural areas are engaged in work related to agriculture, whereas their urban counterparts are engaged more in non-agricultural work like service, skilled and unskilled labour and trade.

Religion: A vast majority (83.7%) of the eligible women said that they were Hindus. There were considerable rural-urban differentials. About 75 per cent of the women from urban areas were Hindus whereas it was about 90 per cent in case of women from rural areas.

Caste: More than half of the women research participants for the study belonged to the dominant peasant proprietor and other backward class category. Nine per cent of the research participants were from the scheduled caste. About 6 per cent of the research participants belonged to the upper caste, with a considerable rural-urban difference (13.2 % from urban areas as against 1.8% from rural areas). Eleven per cent of the research participants were scheduled tribe, 16 per cent from rural areas and 5 per cent from urban areas.

Table 3.11 Per cent distribution of ever-married women age 15-54 by selected background characteristics, according to residence, 2001- 02

Characteristics	Rural	Urban	Total	Mumbai	Rest urban
Current age					
15-19	10.0	06.0	8.5	04.2	7.00
20-24	17.6	14.3	16.4	11.7	15.9
25-29	18.5	17.4	18.1	15.5	18.5
30-34	15.4	16.2	15.7	17.5	15.4
35-39	12.8	15.3	13.8	18.0	13.8
40-44	11.8	13.6	12.5	13.6	13.6
45-49	08.1	11.0	9.2	11.3	10.8
50-54	05.7	06.2	5.9	08.2	04.9
Current marital status					
Married and stay together	88.9	90.4	89.5	91.6	89.7
Married and husband stays out	02.9	01.0	02.1	00.9	01.0
Married but gauna not performed	00.1	00.1	00.1	00.0	00.2
Widowed	05.1	06.6	05.7	06.3	06.8
Divorced	00.5	00.5	00.5	00.1	00.8
Separated/Deserted	02.6	01.4	02.1	01.1	01.6
Years of schooling					
No schooling	53.5	23.8	42.0	15.8	28.2
1-4 yrs of schooling	12.9	07.7	10.9	05.5	08.9
5-7 yrs of schooling	16.5	18.6	17.3	19.7	18.0
8-10 yrs of schooling	13.0	29.4	19.4	35.0	26.4
11-12 yrs of schooling	02.6	07.6	04.6	07.9	07.4
13-15 yrs of schooling	01.1	09.4	04.3	13.3	07.3
16 + yrs of schooling	00.4	03.4	01.5	02.7	03.8
Occupation					
Profession/Technical/Managerial	01.5	03.8	02.4	05.7	02.8
Clerical/Class III-IV	00.1	00.9	00.4	01.1	00.7
Trade	01.1	03.6	02.1	03.4	03.7
Service	00.5	06.3	02.8	07.5	05.6
Skilled	01.1	04.7	02.5	02.3	06.0
Unskilled	00.5	02.7	01.3	00.1	04.2
Cultivators	34.2	02.3	21.8	00.9	03.0
Agricultural labourers	32.2	03.7	21.2	00.0	05.7
Not working in the last 12 months	28.7	72.0	45.5	78.9	68.1
Religion					
Hindu	89.3	74.8	83.7	77.1	73.5
Muslim	05.2	15.9	09.3	09.8	19.4
Sikh	00.0	00.4	00.2	00.9	00.1
Christian	00.2	01.9	00.9	03.3	01.2
Buddhist/Neo Buddhist	04.5	04.2	04.4	05.7	03.4
Jain	00.6	02.5	01.3	03.0	02.2
Religion not reported	00.2	00.4	00.3	00.3	00.2
Social groups					
Upper castes	01.8	13.2	06.2	14.6	12.3
Dominant peasant proprietors	34.0	21.2	29.1	24.5	19.2
Other backward castes	26.2	22.3	24.6	15.1	26.3
Scheduled castes	10.1	08.5	09.5	10.7	07.2
Scheduled tribes	15.7	05.0	11.5	03.6	05.7
Caste that could not be classified	01.6	04.8	02.8	08.6	02.6
Non - Hindus	10.6	25.0	17.3	22.9	26.5
Total	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**
No of eligible women	**3589**	**2123**	**5712**	**704**	**1419**
The above figures are column percentages					

Age at the first marriage

The age at first marriage (table 3.12) in case of a majority (65.1%) of the women is less than 18 years, which is the legal age at marriage. The rural – urban differentials are quite accentuated as for about three quarters of women from rural areas the age at the first marriage was less than 18 years, whereas it was less than half of the women in urban areas. Age at first marriage assumes importance in this survey as it also means beginning of her sexual life and the number of pregnancies that a woman will have in her lifetime is influenced by the age at which she has her first pregnancy.

Table 3.12 Percentage distribution of women's age at marriage by current age and residence, 2001- 02

Current age	Age at marriage (in years)					Total %	No of woman	Median age
	Up to 13	14 - 15	16 - 17	18 - 20	21+			
Rural								
15 – 19	19.6	36.9	30.7	12.8	NA	100.0	359	15.1
20 – 24	16.3	28.5	23.0	29.3	02.9	100.0	633	15.9
25 – 29	21.3	25.0	22.1	23.8	07.9	100.0	664	15.8
30 – 34	24.6	26.1	23.7	18.7	07.0	100.0	554	15.4
35 – 39	28.4	29.1	23.5	15.9	03.1	100.0	459	15.0
40 – 44	38.2	26.8	17.1	14.7	03.1	100.0	425	15.5
45 – 49	34.2	26.7	16.7	18.9	03.6	100.0	289	14.6
50 – 54	38.8	26.4	17.4	13.4	04.0	100.0	206	14.4
Total	25.7	27.9	22.2	19.8	04.3	100.0	3589	15.3
Urban								
15 – 19	06.8	25.6	40.6	27.1	NA	100.0	129	16.4
20 – 24	05.7	15.5	23.7	42.6	12.6	100.0	308	17.7
25 – 29	08.8	16.3	17.1	29.8	28.0	100.0	372	18.1
30 – 34	09.8	14.6	23.0	27.5	25.2	100.0	342	17.6
35 – 39	07.4	19.8	25.1	24.0	23.7	100.0	323	17.3
40 – 44	10.6	17.2	22.8	25.8	23.5	100.0	289	17.5
45 – 49	13.2	13.6	21.0	28.4	23.9	100.0	232	17.5
50 – 54	05.2	12.6	17.0	39.3	25.9	100.0	128	18.7
Total	08.7	16.6	22.8	30.1	21.8	100.0	2123	17.6
Total								
15 – 19	16.1	34.0	33.3	16.6	NA	100.0	488	15.5
20 – 24	12.7	24.1	23.2	33.8	06.2	100.0	941	16.6
25 – 29	16.6	21.8	20.2	26.0	15.4	100.0	1036	16.6
30 – 34	18.7	21.5	23.4	22.2	14.3	100.0	896	16.2
35 – 39	19.3	25.0	24.3	19.3	12.1	100.0	782	15.9
40 – 44	26.6	22.8	19.6	19.4	11.6	100.0	714	15.6
45 – 49	24.4	20.6	18.7	23.4	13.0	100.0	521	15.9
50 – 54	25.3	20.8	17.3	23.8	12.8	100.0	334	15.9
Total	19.1	23.5	22.5	23.8	11.1	100.0	5712	16.1

NA: Not applicable
The above figures are row percentages

The above data show that over time, especially in the last 5 years, age at marriage has increased in the state, even in rural areas, atleast from 13 years to around 14-15 years, but still it continues to be below legal age at marriage.

3.9 PROFILE OF STUDY AREA

A pre-coded interview schedule was used to collect information of the study areas. The schedule was administered to various people like Sarpanch, Gram Sevak, teacher or health workers. Special efforts were taken to obtain health information from health workers only. In some urban areas, in absence of relevant key people who can give information, many a time's observation was used by the researcher to collect information. The villages were selected using probability proportional to size, thus introducing a selection bias. To adjust this bias, village weights are applied (Annexure XIII)

Area Profile Recorder is used in the study to get an understanding of the study area on various development indicators among other things like the availability of basic amenities; its approachability to the outside world (approach roads, transport facilities, communication means etc.); its access to educational facilities and its access to health care services (institutional and non-institutional; public and private; primary and others); and access to other basic services (like postal services, telephone services, fair price shop, bank, weekly market, and pharmacy).

Table 3.13 shows the proportion of resident of Maharashtra who live in areas (PSU) that have various facilities and services. The data show that urban areas are better placed in terms of accessibility to various transport facilities. Significantly 12 per cent of population in the state was still not connected by all weather road, which does effect people's accessibility to health care facilities during crisis.

Table 3.13 Percentage distribution of residents that have selected facilities and services, 2001- 02

Facility / Service	Rural	Urban	Total
Roads and transport facility			
Distance from all weather road is less than 1 km	81.8	99.3	88.3
Distance from state transport stop (ST) is less than 1 km	62.3	NA	NA
Distance from railway station is less than 1 km	1.1	9.2	4.1
Distance from private transport is less than 1 km	75.3	89.5	80.6
Education facilities			
Distance from primary school is less than 1 km	97.9	72.5	88.4
Distance from middle school is less than 1 km	68.4	63.6	66.6
Distance from secondary school is less than 1 km	47.2	51.2	48.7
Distance from higher secondary school is less than 1 km	11.8	24.2	16.4
Distance from college/university is less than 1 km	0.7	8.3	3.6
Health care services – Non-institutional (within the village)			
Traditional healers(Bhagat/Vaidy etc.)	61.1	8.7	41.6
Zola chhap	25.9	5.2	18.2
Local abortionist	5.7	1.9	4.3
Traditional birth attendant (TBA)	85.8	16.4	59.9
Anganwadi workers	96.7	22.9	69.2
Community health worker/guide (CHW)	63.5	NA	NA
Multi-purpose worker (MPW)/Malaria doctor	79.8	NA	NA
Auxiliary nurse midwife (ANM)	80.9	NA	NA
Health care services – Institutional			
Sub-centre	38.9	NA	38.9
Primary health centre (PHC)	10.3	NA	10.3
Health post	NA	5.8	5.8
Private clinic/dispensary	54.1	82.0	64.5
Public hospital[1]	0.8	22.4	11.6
Private hospital	7.4	30.9	16.2
Basic amenities and other facilities			
Electricity	100.0	100.0	100.0
Pharmacy/medical shop	20.0	81.2	42.8
Fair price shop	81.5	73.0	78.3
Post office	53.9	56.5	54.9
Telephone	67.0	99.1	79.0
Bank	25.9	70.0	42.4
Weekly market	24.1	NA	15.1
Total population	**17002**	**10121**	**27123**

[1] It includes rural hospital for rural areas/Community health center for urban areas, district hospital and Municipal corporation/corporation/Zilla Parishad hospital (ZP)

When it comes to educational facilities, data show that 98 per cent of rural residents live in villages that have a primary school, 68 per cent live in villages with a middle school, 47 per cent live in villages that have a secondary school, 12 per cent live in villages with a higher secondary school, and 0.7 per cent live in villages that have a college or university. When it comes to urban residents, one can see a rural-urban difference when it comes to higher education.

Data show that there is larger presence of informal providers like traditional healers, *Zola Chhap*, in rural areas than in urban areas. This means that in the absence of formal system of health services in the rural areas, the rural population is left with no option but to go to the informal providers for treatment. Ninety-seven per cent of the rural population has access to Anganwadi worker compared to 23 per cent population from urban areas. From rural areas, we also gathered additional information from rural areas about health

worker who are based in rural areas like CHW, MPW and ANM. Data show that 63 per cent of the rural population has access to services from CHW, 80 per cent from MPW and 81 per cent from ANMs.

Thirty nine per cent of rural population lives in villages that have a sub-centre and 10 per cent in villages with a PHC. Six per cent of urban population lives in areas having a health post. Less than one per cent population live in villages with a public hospital as against twenty two per cent population who stays in area having a public hospital. Even in the case of private hospitals urban population have better access with 31 per cent urban population has access to hospitals against only 7 per cent rural residents. Similarly in the case of private clinics urban population are better placed than their rural counterparts.

It was found that all the rural and urban population lives in areas that are atleast partly electrified. Twenty per cent of rural residents and 81 per cent of urban residents live in areas that have a medical shop. Access to fair price shop 81 per cent for rural residents and 73 per cent for urban residents. More than half of both rural (53.9%) and urban (56.5%) residents have access to post office within their area. Sixty seven per cent of rural residents and 99 per cent of urban residents live in areas that have atleast one household with a private telephone. Twenty six per cent of rural residents live in village that have a bank as compared to 70 per cent of urban resident who live in area having a bank.

The existence of sources of water and sanitation facility is important indicators of development. Table 3.14 show the availability of water and sanitation facilities.

Table 3.14 Per cent distribution of PSUs with availability of water and sanitation facilities, 2001- 02

Type of amenities*	Rural	Urban	Total
Sources of water supply (N = 203)			
Pipeline	51.8	100.0	75.8
Bore well/Hapsa	64.2	22.2	43.5
Well	37.4	3.8	20.8
River/pond/lake	2.5	0.0	1.3
Other	0.2	0.0	0.1
Source of water supply during shortage (N = 39)			
Public source	61.2	73.1	63.9
Private source	24.6	19.3	23.4
Other	23.2	7.6	19.7
Type of drainage (N = 203)			
Underground drainage	4.1	55.0	29.2
Open drainage	33.7	69.2	51.2
No facility	71.1	8.6	40.3
Type of toilet (N = 203)			
Open site	90.3	17.9	54.6
Community toilet	4.4	48.6	26.1
Individual toilets	10.3	50.7	30.2
Others type of toilets (like absorption pits)	3.6	1.2	2.4

**The responses were of multiple types and therefore, will not add up to 100 per cent*
The above figures are column percentages

Drinking water supply: Availability of drinking water is one of the important indicators of development. We had asked about the source of drinking water supply. Many of the areas had multiple sources of drinking water. Pipeline was a source of water supply in 52 per cent of the rural PSUs as compared to all urban

PSUs. Bore wells / handpumps were the source of water in about 67 per cent of the villages and 22 per cent of urban study units. Wells and rivers were the additional sources of water in some of the rural areas, although comparatively in case of a small percentage.

Situations of water shortage and means: Twenty five per cent of the rural PSUs faced water shortage in the last year as compared to 7 per cent of the urban PSUs. During the period of water shortage, government intervened to deal with water shortage in about 64 per cent of the study units. Of the areas facing water shortage, urban areas (73.1%) are better supported by the public supply of water than the rural areas (62.2%).

Drainage: Often, within the same village or even within the same ward, one comes across multiple types of drainage system. In 4 per cent of the rural PSUs, at least some part of the villages had underground drainage facilities, in 71 per cent of the villages, at least some parts of the villages did not have any facility and in about 34 per cent of the villages some part of the villages had open drainage facility. Further, data show that in about 48 per cent of the villages there was no drainage system in any part, either open or underground, and only one village had covered drainage system. In about 9 per cent of the urban PSUs, at least some part of the wards had no drainage facility at all. These were not necessarily slum areas. And in a large majority of (69.2%) the urban PSUs, at least some parts had open drainage system. Further, data also show that underground drainage facility for the entire unit/ward was available in only about 29 urban PSUs and only one urban PSU was such that it did not have any drainage system for the entire area.

Toilet: This too was a multiple response type question for the very reason that not entire village or an urban ward would have one type of toilet facilities. In 90 per cent of the rural and 18 per cent of the urban PSUs 'open sites' were used at least by some. Table 3.14 shows that community toilet facilities seem to be more prevalent in urban areas (48.6%) and rare in rural areas (4.4%).

CHAPTER 4

PREGNANCY OUTCOME

4.1 INTRODUCTION

Our survey defined recognised pregnancy as gestation resulting in at least one missed or delayed menstrual period. As described earlier, we adopted various measures to enhance data quality and reduce omissions of conceptions. Despite these measures, our survey is subject to errors inherent in all retrospective surveys, like identifying pregnancies which did not survive long enough to cause a delayed or missed menstrual period. These problems can bias estimates of pregnancy loss as data are analysed taking into account only recognised, reported pregnancies. Another aspect that might affect the true estimation of pregnancy outcomes in the state is that never married women were excluded from the study.

Regardless of whether abortion is legal or widely practised, substantial underreporting of pregnancy losses has been widely acknowledged by researchers.[1] This reporting error is mostly due to loss of memory to recall the occurrence of those pregnancies. In order to reduce this error during analysis, we excluded those pregnancies, which occurred before 1976. We used age cohort analysis to determine the cut off point for recall lapse on the part of women research participants as regards reporting of their own pregnancy histories. The eligible women in this survey were the ones ever married and age 15-54 years. Class intervals of five years beginning from age 15 years were used to define the cohorts. The time period of five years was necessitated in order to get sufficient number of events for the computation of rates. We calculated age specific fertility rates of all women for five -year periods preceding the survey and saw that the estimate of fertility rate was low for the period before 1976. Assuming that this decline in fertility rate before 1976 is largely due to memory lapse of pregnancies of older women of their earlier reproductive years, while analysing the data we have thus excluded pregnancy outcomes that occurred before 1976, unless specified otherwise.

Keeping these limitations in mind, an effort was made in the survey to get reliable information on pregnancy outcome throughout the reproductive lifespan of women, however, special endeavors were made to get accurate information for the period after 1996, the 5-year period preceding the survey. Hence, in many cases data is analysed separately for the two time periods – 1976-1995 and the reference period, that is, 1996-2000. We analysed pregnancy outcome from two perspectives: using individual woman as a unit of observation and using reported pregnancy outcomes as unit of analysis. Though we interviewed a total of 5712 women, for further analysis of data we have taken women who were exposed to pregnancy at the time of interview and therefore 106 married women who have not attained menarche or have not yet started their marital life has been excluded.

4.2 REPORTED LEVEL OF PREGNANCY OUTCOMES

The outcomes of pregnancies are classified as live birth, stillbirth, spontaneous and induced abortion. The data shows that in cases of natural pregnancy outcomes, i.e., live birth, stillbirth and spontaneous abortion,

[1] Saha, S. (2003): *Estimating Abortion Rate through Community Based Studies- Methodological Issues*, Working Paper, Abortion Assessment Project – India, CEHAT and Health Watch, Mumbai

the percentage distribution between rural and urban areas or Mumbai and rest of urban area, show a distribution which are more or less proportionate to the distribution of population, but in case of induced abortion, this varies considerably and is sharper for the 1976-95 period. Table 4.1 shows the pregnancy outcome ratio and rates by type of residence.

Table 4.1 Ratios* and rates** of types of reported pregnancy outcome according to residence, 1976-95

Pregnancy Outcome	Rural		Urban		Total		Mumbai		Rest urban	
	Ratio	*Rate*	*Ratio*	*Rate*	*Ratio*	*Rate*	*Ratio*	*Rate*	*Ratio*	*Rate*
Stillbirth	17.4	16.3	8.5	7.7	14.2	13.1	11.5	10.2	7.4	6.8
Spontaneous abortion	39.2	36.8	56.0	50.5	45.2	41.9	56.6	50.1	55.6	50.7
Induced abortion	9.2	8.6	43.8	39.5	21.7	20.0	62.3	55.2	35.3	32.1
Live birth	-	938.3	-	902.4	-	925.0		884.6	-	910.5
N	6820	7269	3642	4034	10462	11303	1080	1220	2562	2814

** Ratio is defined as number per 1000 live births*
*** Rate is defined as number per 1000 pregnancy outcomes*

The data reveal that both ratio and rate of stillbirth is about twice higher in rural than urban areas, perhaps indicative of poor access to antenatal and childbirth facilities (Table 4.1). Both ratio and rate of spontaneous abortion are about 1.4 times higher in urban areas than in rural areas. In the case of induced abortion, both rate and ratio are about 4.5 times more in urban areas, very clearly indicative of better access to abortion services in urban areas. When we disaggregate Mumbai from the urban sample, we see that both rate and ratio of induced abortion is almost double in Mumbai than the rest of the urban areas and this is most likely due to the use of abortion as a spacing method, given the fact that contraceptive use levels in Mumbai as revealed by NFHS-2[2] are lower than rest of the state.

Table 4.2 Distribution of all pregnancy outcome ratios* and rates** according to residence, 1996-2000

Pregnancy Outcome	Rural		Urban		Total		Mumbai		Rest urban	
	Ratio	*Rate*	*Ratio*	*Rate*	*Ratio*	*Rate*	*Ratio*	*Rate*	*Ratio*	*Rate*
Stillbirth	9.9	9.0	10.2	8.8	10.0	8.9	0.0	0.0	14.7	12.9
Spontaneous abortion	51.7	47.1	68.9	59.5	57.2	51.1	95.9	79.8	57.0	50.1
Induced abortion	37.6	34.2	79.1	68.3	50.7	45.4	107.0	89.0	66.8	58.7
Live birth	-	909.7	-	863.4	-	894.5	-	831.3	-	878.4
N	1960	2154	857	991	2817	3145	240	289	617	702

** Ratio is defined as number per 1000 live births*
*** Rate is defined as number per 1000 pregnancy outcomes*

Table 4.2 shows the rate and ratio of different types of pregnancy outcomes of all ever-married women for a 5-year period prior to survey by their outcome. This we have analysed separately as this data we assume would suffer less in terms of recall lapse and would also show if there is any different trends in pregnancy losses in recent years. In the case of induced abortion, both rate and ratio is about twice more in urban areas than in rural areas, a substantial change over the earlier period when the difference was over

[2] International Institute of Population Sciences and MEASURE DHS + ORC Macro, (2002). *National Family and Health Survey 2 –Maharashtra*, IIPS, Mumbai.

4.5 times indicating improved access for abortion services in recent years for rural population, decreasing demand for children and increasing use of abortion as a method of limiting childbirth as well as increased demand for sex-selective abortions. The rates of pregnancy loss, both spontaneous and induced, are much higher in Mumbai than in the rest of urban areas in the state.

Trends in pregnancy losses

Further comparison of the data from Table 4.1 and 4.2, shows an increasing trend in spontaneous abortion from 41.9 per 1000 reported pregnancy outcomes for the period 1976-95 to 51.1 for the period 1996-2000. While this may be attributed to recall lapse of early spontaneous abortion by women in the survey who have completed their child bearing some time ago one cannot rule out reporting of induced abortions for the recent period in the survey as spontaneous given the environment resulting from the ban of sex selective abortion. Induced abortion also has shown a large jump, from 20.0 to 45.4 per 1000 reported pregnancy outcomes for the recent period. Here too, the role of recall lapse cannot be ruled out. However is also possible that there is a genuine increase in the proportion of induced abortion due to increased access to abortion services and increasing demand for small family with the desired sex of the child. Trends in spontaneous and induced abortion by type of residence for five-year periods preceding the survey are presented in Figure 4.1.

Figure 4.1 Trends in abortion according to residence

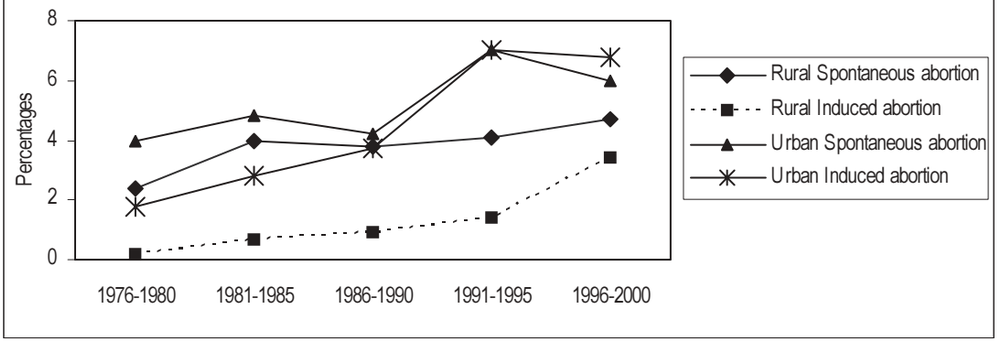


Figure 4.1 shows that incidence of induced abortion in urban areas shot up quite dramatically from 3.7 per cent between 1986-90 to 7 per cent in 1991-95. This may be due to the fact that sonography centres and also MTP centres became more accessible to people in urban areas. For rural areas this spurt in induced abortion rate occurs in the later period, that is 1996-2000. This may be due to the fact that abortion services became comparatively more accessible to rural population in later half of the last decade.

What is also interesting is the sharp increase in spontaneous abortion from 4.2 to 7 per cent in urban areas between 1986-90 and 1991-95, whereas for rural areas the increase is only from 3.8 to 4.1 per cent for the same period. One does not find a very reasonable explanation for this significant rural-urban difference. Literature review suggests that to a great extent spontaneous abortion remains the same across various populations.[3] Thus there should not be such a difference in spontaneous abortion rate among population from the same

[3] Bandewar, S., Saha, S. and Khaire, B. (2004) : *Research Ethics in Practice,* CEHAT, Pune.

state for the same time period. A possible explanation for this difference may be that women from urban areas may have reported induced abortion as spontaneous abortions. It is also unlikely that there is a possibility of such a high recall lapse by urban women of pregnancies ending in spontaneous abortion prior to 1985, if we assume that the reported rate of spontaneous abortion has always remained high in urban areas at any point of time.

In order to understand recent trends in different types of pregnancy outcomes the data was further analysed to find out rate of each type of pregnancy outcome for the last five year prior to survey and is shown in Figure 4.2.

Figure 4.2 Rate of different types of pregnancy outcomes per 1000 pregnancy outcomes for five year prior to survey

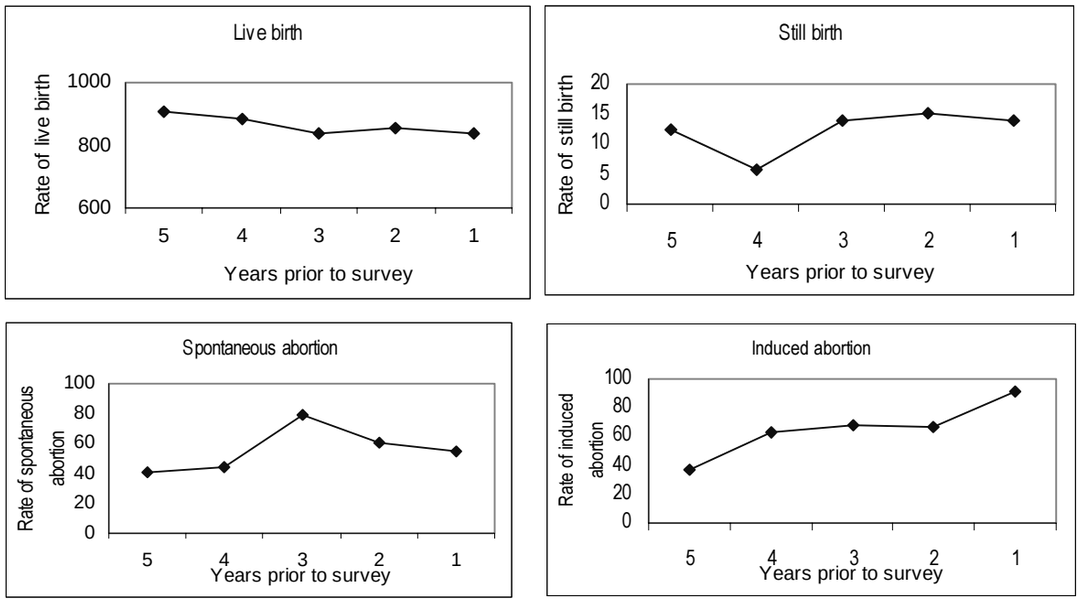


Figure 4.2 shows that rate of live birth over the years decreased from 909 live births per 1000 pregnancy outcomes to 839 in the first year prior to survey with a marginal increase in the second year. As far as stillbirth is concerned, it has more or less remained constant over the five-year period except for the fourth year prior to survey, where the rate of stillbirth decreased significantly to 5.8 per 1000 pregnancy outcomes. The rate of spontaneous abortion increased from 41.1 per 1000 pregnancy outcomes for the fifth year prior to survey to 54.6 for the year prior to survey, including a steep increase in the third year to 78.8. In the case of induced abortion, there is a distinct increase in the rate of induced abortion over the year from 37.2 in the fifth year prior to survey to 91.7 in the first year prior to survey. There is, in fact a very sharp increase in induced abortion rate in the last year, which proves that incidence of induced abortions had increased significantly in recent years. The role of recall lapse in this increase of rate of induced abortion is likely to be negligible as there is not such a sharp increase in the rate of other types of pregnancy loss for the same time period.

Table 4.3 Abortion rates* by period and age at survey (both spontaneous and induced), 1976-2000

Period	Age at survey							
(cal. years)	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54
1976-1980					1.52	***12.19***	6.84	7.70
1981-1985				4.64	***13.15***	15.79	9.11	5.33
1986-1990			4.97	***14.35***	13.41	7.48	3.42	0.59
1991-1995		4.09	***16.94***	17.66	11.89	4.71	0.76	
1996-2000	0.00	***15.22***	17.86	13.47	3.79	1.38	0.76	

** Abortion rate is defined as number of abortion (spontaneous and induced) per year per 1000 women*

Table 4.3 gives abortion rates in five-year calendar periods prior to the survey by age of woman at survey. The rates for a given period refer to different age groups depending on the age at survey. The rate for the period 1996-2000 for women of age 15-19 years at survey refers to about the same ages as the rate for 1991-95 (the previous five-year period) for women of age 20-24 at survey, the rate for the 1986-90 for women of age 25-29 at survey, the rate for the 1981-85 for women of age 30-34 at survey, and the rate for 1976-80 for women of age 35-39 at survey. Thus, the rates along a diagonal, as shown in the table, refer to the same age range and trends in these are assessed.

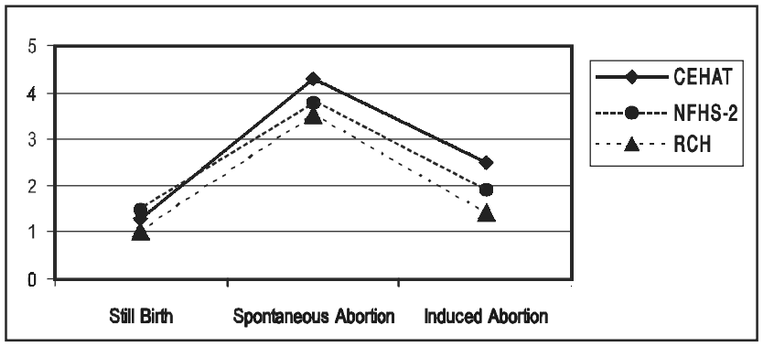
From Table 4.3, it can be seen that the rates for age ranges 20-34 are higher than for younger and older age ranges and some rise can be seen during the 1990s. For understanding trends in abortion rate we can take the age cohort 25-29, for women who during survey were currently between 25-44 years, assuming recall lapse of women who are 40 years old now would not have much recall lapse for events occurring 10-15 years back and the other assumption is most in Maharashtra complete their fertility by age 25 years. The analysis shows that the women who are aged currently 40-44 had an abortion rate of 15.79 when they were aged 25-29 as compared to the abortion rate of 17.86 for women who are currently aged 25-29 years. Therefore there are reasons to believe that ***abortion rate over the years in the state is on the rise during the 1990s***.

Pregnancy loss comparisions with other studies

Since our data measured incidence through the entire reproductive lifespan, our findings are not directly comparable to official records, which attempt to measure incidence annually. Yet our findings indicate a significant increase from previous survey based quantitative estimates that are comparable. It has been said that retrospective estimates in the range of 100 to 150 losses per 1000 pregnancies indicate coverage equivalent to the best prospective studies.[4] The present study captured a pregnancy loss rate of 105 for the five-year period preceding the survey though for the larger period, 1976-95, the rate of pregnancy loss is 82 per 1000 reported pregnancies.

[4] Casterline J.B. (1989): Collecting data on pregnancy loss: A review of evidence from the World Fertility Survey, *Studies in Family Planning*, Vol 20(2), pp 81-95.

Figure 4.3: Rate* of pregnancy loss in Maharashtra: A comparison



** Pregnancy loss per 100 pregnancy outcomes*

Figure 4.3 reveals that when we compare the pregnancy loss (types of pregnancy loss reported per 100 reported pregnancy outcome) in Maharashtra, except loss due to stillbirth, the figures from the present study are considerably higher than National Family Health Survey (NFHS-2)[5] and Reproductive and Child Health (RCH)[6] survey rates. The present study recorded a 1.3 times higher induced abortion rate than NFHS-2 and 1.8 times higher rate than RCH study.

Outcomes by order of pregnancy

Table 4.4 Per cent distribution of pregnancy outcome by parity for ever-married women by place of residence, 1976-2000

Order of pregnancy	Number of pregnancies	Live births	Still births	Spontaneous abortions	Induced abortions
Rural					
1	2621	92.7	2.1	4.7	0.4
2	2426	93.4	1.3	4.0	1.3
3-4	3116	93.8	1.1	3.1	2.0
5+	1260	92.7	1.3	3.0	3.0
All	9423	93.3	1.5	3.8	1.5
Urban					
1	1569	91.5	1.5	6.0	1.0
2	1367	88.9	1.0	5.2	4.9
3-4	1553	87.5	0.4	4.5	8.1
5+	536	89.5	1.1	4.9	4.6
All	5025	89.3	1.0	5.2	4.5
Total					
1	4190	92.2	1.9	5.2	0.6
2	3793	91.7	1.2	4.5	2.6
3-4	4669	91.5	0.9	3.6	4.0
5+	1796	91.8	1.2	3.6	3.5
All	14448	91.8	1.3	4.3	2.5

The above figures are row percentages

[5] International Institute of Population Sciences and MEASURE DHS + ORC Macro. *op.cit.*

[6] International Institute of Population Sciences (2000): *Reproductive and Child Health Project: Rapid Household Survey- Phase I, India,* IIPS, Mumbai.

Table 4.4 shows the per cent distribution of pregnancy outcome by order of pregnancy among rural and urban women. As induced abortion is a competing risk, the proportion of spontaneous abortions moderately decreases by order of pregnancy. About 5 per cent of the first order pregnancies ended in spontaneous abortion and it is less than 4 per cent for pregnancy order more than four. Conversely, the per cent of induced abortion increases with rising order of pregnancy. When one compares the place of residence with proportion of induced abortion, one sees that increase of induced abortion with rising order of pregnancy is much larger in case of urban areas than rural areas. For instance, in rural areas the rise in percentage of induced abortion from first pregnancy to second is 1.3 from 0.4 whereas in case of urban areas the rise is 4.9 from 1.0. The findings thus corroborate earlier findings that abortion is used as a method of family planning.

Differentials of pregnancy outcomes

Table 4.5 Distribution of pregnancy outcome of ever-married women by selected characteristics, 1976-2000

Characteristics	No. of ever married women	No. of pregnancies	Mean pregnancy	Mean LB	% LB	Mean SB	% SB	Mean SA	% SA	Mean IA	% IA
Place of residence											
Rural	3526	9423	3.41	3.18	93.3	0.05	1.5	0.13	3.8	0.04	1.4
Urban	2082	5025	3.03	2.70	89.2	0.03	1.0	0.16	5.2	0.14	4.5
Mumbai	695	1509	2.74	2.38	87.1	0.03	1.1	0.16	5.8	0.17	6.1
Rest urban	1387	3516	3.19	2.88	90.3	0.03	1.0	0.16	5.0	0.12	3.7
Standard of living											
Low	1235	3537	3.51	3.33	95.0	0.04	1.3	0.11	3.2	0.01	0.5
Medium	2746	7164	3.31	3.06	92.3	0.04	1.4	0.14	4.3	0.06	1.9
High	1627	3747	2.99	2.63	88.1	0.03	1.1	0.16	5.3	0.16	5.5
Years of schooling											
No schooling	2407	7005	3.75	3.56	94.7	0.06	1.6	0.11	3.1	0.02	0.6
1-7 years	1586	4289	3.31	3.04	92.0	0.03	1.1	0.15	4.6	0.08	2.3
8-12 years	1304	2636	2.55	2.19	85.8	0.02	0.6	0.18	7.1	0.17	6.4
More than 12	311	518	2.10	1.72	82.8	0.02	0.7	0.13	6.5	0.22	10.0
Religion											
Hindu	4710	11955	3.21	2.95	92.1	0.04	1.3	0.14	4.3	0.07	2.3
Muslim	511	1519	3.73	3.38	90.7	0.04	1.1	0.19	5.1	0.11	3.1
Buddhist/Neo Buddhist	246	675	3.60	3.38	94.1	0.02	0.6	0.12	3.1	0.06	2.2
Others	141	299	2.59	2.26	86.6	0.03	1.3	0.14	5.4	0.17	6.7
Social groups											
Upper caste	338	725	2.69	2.31	86.0	0.02	1.2	0.14	5.1	0.21	7.7
DPP	1642	4057	3.11	2.87	92.2	0.03	1.2	0.13	4.3	0.06	2.3
OBC	1400	3529	3.24	2.96	91.3	0.04	1.3	0.15	4.6	0.08	2.8
Schedule caste	529	1406	3.39	3.13	92.5	0.06	1.8	0.14	4.2	0.05	1.6
Schedule tribe	655	1872	3.51	3.34	95.1	0.05	1.5	0.09	2.7	0.02	0.7
Caste unclassified	69	367	3.24	2.96	89.9	0.05	1.6	0.21	6.6	0.05	1.8
Non-Hindus	975	2492	3.52	3.20	91.1	0.03	1.1	0.16	4.7	0.11	3.2
Total	5608	14448	3.26	2.99	91.8	0.04	1.3	0.14	4.3	0.08	2.5

The above per cents are row percentages

Differentials of pregnancy outcome of ever-married women are examined in Table 4.5. The mean number of pregnancy is higher among rural women (3.41) than among urban women (3.03). There is considerable difference in mean number of pregnancy outcome between Mumbai (2.74) and other urban areas of the state (3.19). The incidence of induced abortion is more than 3 times higher in urban areas than rural areas and is much higher in Mumbai. To that extent the incidence of live birth is less in urban areas than in rural areas. There is not much of a rural urban difference in the case of spontaneous abortion and stillbirth. The average number of outcomes is higher among women from low standard of living (3.51) than among women from high standard of living (2.99). It is also noticed that mean number of induced abortions is 16 times higher among women from high standard of living than women from low standard of living. Difference in mean in live births, stillbirths and spontaneous abortions among women of different standards of living is very less as compared to induced abortion.

There is a negative relationship between the level of education of mother and the number of pregnancy outcome. Non-schooling women on an average had 3.75 pregnancy outcomes, among women with less than 7 years of schooling it decreased to 3.31 and among women with more than 12 years of schooling it further decreased to 2.99. The per cent of live birth decreases with rising educational level of women. The per cent of pregnancies ending in spontaneous abortion increases with increasing level of education. This is a strange association. This association might be because educated women reported induced abortion as spontaneous. In the case of induced abortions the increase was much more from less than 1 per cent among non-schooling women to 10 per cent among those who completed 12 years of schooling.

The mean number of pregnancy outcomes for Hindu women is 3.21, for Muslim women it is 3.73, for Buddhist it was 3.60 and for the 'other religions' category the mean was found to be 2.59. The percentage of pregnancies ending in induced abortion was lowest among Buddhists (2.2) than other religions, for Muslims it was 3 per cent and for 'other religions' category it was as high as 7 per cent.

The mean number of outcomes decreases as the caste status rises and there is a positive relationship in the case of induced abortion. Among the different Hindu castes, women from the scheduled castes (3.39) had the highest mean outcome than other castes and the lowest mean outcome is among women from the upper caste (2.69). However, women from the upper caste (0.21) had the highest average of induced abortion and the lowest is among the scheduled castes (0.05). The mean number of outcomes among the scheduled tribes is 3.51, with an average of 0.02 induced abortions. Incidence of spontaneous abortion is considerably low among the scheduled tribes (0.09).

Table 4.6 Proportion of ever married women reporting atleast one stillbirth, one spontaneous abortion and one induced abortion, by selected demographic variables, 1976-2000

Demographic variable	Still birth	Spontaneous abortion	Induced abortion	Ever married women
Current age				
Less than 20	1.22	8.29	2.68	410
20-24	2.39	8.70	5.54	920
25-29	3.39	11.83	7.66	1031
30-34	3.68	11.94	8.82	896
35-39	5.24	9.97	8.06	782
40+	4.08	10.07	5.10	1569
Place of residence				
Rural	4.03	9.53	3.72	3526
Urban	2.69	11.72	11.14	2082
Mumbai	2.73	13.09	13.96	695
Rest urban	2.67	10.96	9.73	1387
Standard of living				
Lower	3.89	8.58	1.46	1235
Middle	3.71	10.67	5.06	2746
Higher	3.01	11.12	12.72	1627
All women	3.55	10.34	6.52	5608

Table 4.6 presents the incidence of fetal loss per ever-married women in specific age cohorts, with selected demographic variables. The rates show that pregnancy loss is a relatively common phenomenon in all age groups, with a high in the age group of 30-34.

In rural areas, 4 per cent women had ever experienced at least one stillbirth as compared to 2.7 per cent in urban areas. There is not much difference between Mumbai and rest of urban areas of the state as far as stillbirth is concerned. In case of spontaneous abortion, 9.5 per cent of women from rural areas experienced spontaneous abortion as compared to 11.7 per cent of women from urban areas. As compared to rural women, proportion of women experiencing atleast one induced abortion was 2.9 times more in urban areas as a whole and 3.7 times more in Mumbai. Besides inaccessibility for rural women to abortion services, they are also much more likely to lack knowledge about availability of safe abortion services.

Table 4.6 also shows the proportion of women experiencing pregnancy loss by different living standards. There is not much of a difference in terms of proportion of women experiencing natural losses across standard of living groups, but in the case of induced abortion there is considerable difference among lower and higher standard of living. Proportion of women from higher standard of living experiencing induced abortion is 8.7 times higher than of women from lower standard of living. The data thus indicate that socio-economic and locational advantages are important factors determining whether the demand for induced abortion is met or unmet, though one is aware of the fact that the demand for abortion may not be uniform for all the subgroups.

Gestational period of abortions

Percentages of abortions for the reference period by length of gestation are presented in Table 4.7 and 4.8. While for spontaneous abortions the data is presented for single month, for induced abortions, LOG is recoded keeping in mind medical and legal implications. Table 4.7 presents spontaneous abortion by weeks of gestation by place of residence. It is observed that pregnancy loss that might have happened in the first four weeks has gone unrecorded, as pregnancy in the first month cannot be recognised without a clinical diagnosis. The table also reveals that a large percentage (58.8%) of pregnancies are lost between 5 to 12 weeks, which goes according to the existence knowledge that a large proportion of pregnancy having any kind of defect gets miscarried in the earlier gestation periods.

Table 4.7 Percentage distributions of spontaneous abortions, by length of gestation, 1996-2000

LOG (Weeks)	Rural	Urban	Total	Mumbai	Rest urban
1-4	-	-	-	-	-
5-8	21.6	17.4	20.0	21.7	14.1
9-12	31.3	51.1	38.8	43.5	56.8
13-16	24.6	13.6	20.4	8.7	17.4
17-20	11.9	10.9	11.5	17.4	6.1
21-24	7.7	5.1	6.8	4.3	5.8
25-28	3.0	1.9	2.6	4.3	0.0
Abortions	102	58	160	23	35
The above figures are column percentages					

Table 4.7 also revealed that more than 11 per cent of spontaneous abortion from rural areas occurred after 20 weeks whereas in case of urban areas it was around 7 per cent. This data assume importance because risk factor from abortion increases after 20 weeks and in rural areas where timely quality health service is a rare commodity, it could result in maternal mortality without proper facility for post-abortion management.

A worldwide review of induced abortion shows that India has one of the highest proportions of second trimester abortions amongst countries, which have legalised abortion.[7] A community based study in West Bengal showed that 50 per cent of the induced abortion took place after 12 weeks.[8] Table 4.8 shows distributions of pregnancies terminating in induced abortion by weeks of gestation according to residence for the period 1996-2000.

Table 4.8 Percentage distributions of induced abortions, by length of gestation, 1996-2000

LOG (weeks)	Rural	Urban	Total	Mumbai	Rest urban
Less than 9	27.8	59.2	43.6	72.4	48.8
9-12	31.9	26.8	29.6	24.1	29.3
13-20	33.3	9.8	21.4	3.4	14.6
21-28	7.0	4.2	5.6	0.0	7.3
Abortions	74	67	141	26	41
The above figures are column percentages					

[7] Teitze, C and Henshaw, S.K. (1986): *Induced Abortion – A world review*, (6th Edition), The Alan Gutmacher Institute, New York.
[8] Mathai, S.T. (Unpublished): *A study on prevalence of abortions in Malda, Uttar Dinajpur and Dakshin Dinajpur*, 1999.

The present study findings do not go along with this evidence, with 73 per cent abortions being done in the first trimester, and for Mumbai it is as high as 96.5 per cent. A possible explanation is that there might have been some deliberate reporting of terminating abortion in the first trimester, so as to camouflage any linkage between sonography and sex selective abortion (sex of the foetus can only be identified after fourth month). What is also important from public health point of view and also from legal aspect, is that 5.6 per cent of induced abortion took place after 5th month. Late abortions expose a woman to considerable risk, and can be extremely critical, if not done under proper medical attention. Though most of the time the reasons for these late abortions are due to improper foetal growth, as revealed in the data, these abortions could have taken place in earlier gestation period if the pregnancy was properly monitored from early gestation.

Relationship between age at pregnancy outcome and spontaneous abortion

We have already discussed the relationship between pregnancy order and ending of a pregnancy in spontaneous abortion in Table 4.4. Age at pregnancy and interval between two pregnancies are other important factors that might affect the outcome of a pregnancy. Table 4.9 examines whether these factors have any association with a pregnancy terminating in spontaneous abortion.

Table 4.9 Percentage of reported pregnancies terminating in spontaneous abortion, by selected characteristics of women, 1976-2000

Demographicvariable	Rural	Urban	Total	Mumbai	Rest urban	Number of preg outcomes
Mean	1.24	1.33	1.28	1.22	1.39	14448
Age at pregnancy outcome						
Less than 20	5.4	6.2	5.6	6.9	6.0	4923
20-24	3.5	4.4	3.8	3.9	4.6	5719
25-29	2.0	6.0	3.8	7.1	5.4	2774
30-34	2.4	4.3	3.3	4.9	4.0	843
35-39	0.0	4.1	1.9	9.5	1.9	158
40+	9.5	0.0	6.9	0.0	0.0	31
Interval[1] since previous[2] pregnancy (in months)						
Up to 8 months	58.2	49.3	53.7	38.5	56.1	133
9-15	8.3	10.1	9.0	10.2	10.1	1310
16-23	4.0	2.8	3.5	2.9	2.7	1800
24-35	2.2	2.6	2.3	4.3	2.1	4174
36+	1.3	3.2	2.0	3.6	3.0	2841

[1] Interval means time span between two outcomes

[2] Excludes first pregnancy

The demographic correlates of spontaneous loss considered in Table 4.9 fall into two general categories: age at pregnancy outcome, and characteristics of the pregnancy history at the time of pregnancy outcome expressed here as pregnancy order and interval since previous birth. It is evident from the table that if the age at pregnancy outcome is either low or high there is a higher chance of that pregnancy ending in miscarriage.

The study findings regarding interval between pregnancy outcomes and its effect on the outcome are consistent with previous evidence. A number of studies cited in Casterline[9] demonstrate that rates of pregnancy loss are higher when the interval from previous termination to next conception is short (intervals with less than six months showing the most extreme rates of loss). Though the present data show interval between two outcomes, one can still say that interval which are more than 9 months, there are significant differences between the various categories. Pregnancies that were conceived in less than 15 months have six times higher chance of getting miscarried than pregnancies that are conceived with a gap of 27 (subtracting 9 from 36) months.

Differentials of induced abortion

Table 4.10 reveal that if we take the age cohort of 30-34 years, assuming that the majority of women from this age cohort would be married, are in the later stages of their reproductive life (NFHS-2 Maharashtra suggests that women's median age at sterilisation is 25.3 years), and are less affected by recall lapse, we see that 7.7 induced abortion took place per 100 ever married women. The number of abortions per 100 women declines after age 34, which may be suggestive of recall lapse, or fewer abortions in earlier years. High rate of induced abortion in the age group 25-34 years also indicate unmet need of family planning methods, either for spacing or limiting child birth.

Table 4.10 Induced abortion rate* by selected demographic variable, 1976-2000

Demographic variable	Ever married women	Rate of induced abortion
Current age		
Less than 20	410	6.44
20-24	920	6.90
25-29	1031	7.41
30-34	896	7.70
35-39	782	6.85
40+	1569	5.54
Place of residence		
Rural	3526	3.77
Urban	2082	11.29
Mumbai	695	15.11
Rest urban	1387	9.37
Standard of living		
Lower	1235	1.21
Middle	2746	4.59
Higher	1627	14.01
All women	5608	6.58

** Number of induced abortions per 100 ever married women*

Table 4.10 also reveals that abortion rate per 100 ever-married women is 2.9 times more in urban areas of the state than the rural areas and is 11 times more among women from higher standard of living as compared to women from lower standard of living.

[9] Casterline, J.B. *op.cit*.

The abortion rate per 100 ever-married women is found to be 6.58. This rate is higher compared to the rate of 2.56 reported in the community based study of abortions in West Bengal[10] and the rural Maharashtra study that reported a rate of 1.9 induced abortion per 100 women.[11]

Based on the CBR of 21.1 and a population of 96,752,247 (according to 2001 census), the estimate of live birth for the period 2000-01 is calculated to be 2,041,473. Applying the ratio of pregnancy losses per 100 live births obtained from the survey, we get 20,415 stillbirths, 116,365 spontaneous abortions and 104,120 induced abortions for 2001.

The latest data that is available for reported MTP cases for Maharashtra is for the year 1996. For 1996-97, 56258 MTPs were reported for the state.[12] Assuming a birth rate of 21.1 and a population of 86,587,000 for the year 1996 for Maharashtra,[13] we get 93,180 induced abortions. This implies that around 40 per cent of induced abortions were not reported for the year 1996.

Association of pregnancy outcome with successive outcomes

Table 4.11 and Figure 4.4 show the association between successive pregnancies. If the first pregnancy is a live birth, the chances of second pregnancy ending into a live birth is 93 per cent, for stillbirth it is one per cent, for spontaneous abortion it is 3.5 per cent and for induced abortion it is 2.7 per cent. About 20 per cent of the pregnancies end in stillbirth or spontaneous abortion if the first pregnancy is a spontaneous abortion. Outcome of the second pregnancy into live birth reduces from 95 per cent to 79 per cent if the outcome of the first pregnancy is spontaneous abortion. Similar types of relationships are noticed for later order pregnancy outcomes also. These findings show that some women are prone to miscarriages and spontaneous abortion.

As regards induced abortion, the chances of successive pregnancies ending in induced abortion increases with increasing order of birth. The data provide evidence of women using induced abortion as a method of contraception, for instance as high as 26 per cent of pregnancies of all fifth pregnancies were aborted among women who also aborted their earlier pregnancy.

---

[10] Mathai, S.T. (Unpublished): *A study on prevalence of abortions in Malda, Uttar Dinajpur and Dakshin Dinajpur*, 1999.

[11] Ganatra, B., Hirve, S., Walawalkar, S., et al. (2000): Induced abortions in a rural community in Western Maharashtra: Prevalence and patterns. Paper presented at a workshop on Reproductive health in India: New evidence and issues, Pune, March.

[12] Ministry of Health and Family Welfare (1999): *Family welfare programme in India: Year book 1997-98*, Department of Family Welfare, Government of India, New Delhi. The data cited here is for MTPs reported upto September 1996.

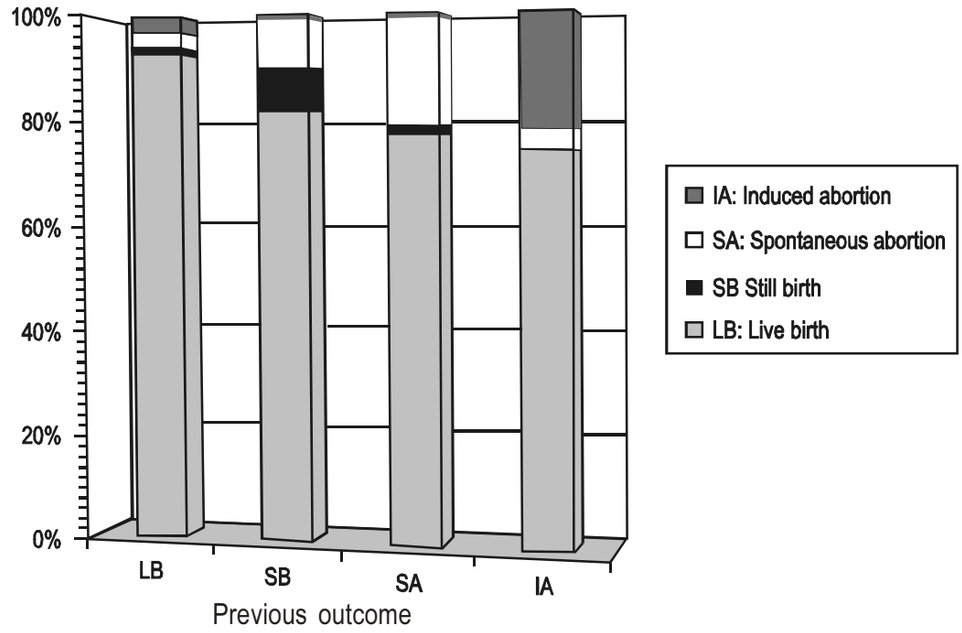
[13] UNFPA (1997): *India: Towards population and development goals*, Oxford University Press, New Delhi.

Table 4.11 Per cent distribution of $(i+1)^{th}$ outcome by nature of outcome according to the nature of i^{th} outcome

Order of	Live birth		Stillbirth		Spontaneous abn		Induced abn		Total	
Pregnancy	**#**	**%**	**#**	**%**	**#**	**%**	**#**	**%**	**#**	**%**
First					**Second**					
Live birth	3875	92.8	43	1.0	146	3.5	112	2.7	4176	100.0
Stillbirth	78	82.1	7	7.4	10	10.5	0	0.0	95	100.0
SA	186	79.5	3	1.3	44	18.8	1	0.4	234	100.0
IA	18	85.7	0	0.0	1	4.8	2	9.5	21	100.0
Total	4157	91.8	53	1.2	201	4.4	115	2.5	4526	100.0
Second					**Third**					
Live birth	2883	93.3	24	0.8	74	2.4	108	3.5	3089	100.0
Stillbirth	39	84.8	3	6.5	4	8.7	0	0.0	46	100.0
SA	133	77.3	3	1.7	35	20.3	1	0.6	172	100.0
IA	66	80.5	0	0.0	5	6.1	11	13.4	82	100.0
Total	3121	92.1	30	0.9	118	3.5	120	3.5	3389	100.0
Third					**Fourth**					
Live birth	1688	92.3	14	0.8	52	2.8	75	4.1	1829	100.0
Stillbirth	18	75.0	3	12.5	2	8.3	1	4.2	24	100.0
SA	69	75.8	1	1.1	20	22.0	1	1.1	91	100.0
IA	38	71.7	0	0.0	1	1.9	14	26.4	53	100.0
Total	1813	90.8	18	0.9	75	3.8	91	4.6	1997	100.0
Fourth					**Fifth**					
Live birth	876	93.4	8	0.9	26	2.8	28	3.0	938	100.0
Stillbirth	10	83.3	2	16.7	0	0.0	0	0.0	12	100.0
SA	40	72.7	1	1.8	13	23.6	1	1.8	55	100.0
IA	25	71.4	0	0.0	1	2.9	9	25.7	35	100.0
Total	951	91.4	11	1.1	40	3.8	38	3.7	1040	100.0
Fifth and above					**Sixth and above**					
Live birth	774	94.2	11	1.3	18	2.2	19	2.3	822	100.0
Stillbirth	12	85.7	0	0.0	2	14.3	0	0.0	14	100.0
SA	40	80.0	1	2.0	9	18.0	0	0.0	50	100.0
IA	13	56.5	0	0.0	0	0.0	10	43.5	23	100.0
Total	839	92.3	12	1.3	29	3.2	29	3.2	909	100.0
i^{th}					**$(i+1)^{th}$**					
Live birth	10096	93.0	100	0.9	316	2.9	342	3.2	10854	100.0
Stillbirth	157	82.2	15	7.9	18	9.4	1	0.5	191	100.0
SA	468	77.7	9	1.5	121	20.1	4	0.7	602	100.0
IA	160	74.8	0	0.0	8	3.7	46	21.5	214	100.0
Total	10881	91.7	124	1.0	463	3.9	393	3.3	11861	100.0

Figure 4.4 shows that the probability of a pregnancy ending in live birth is 1.2 times more if the earlier pregnancy had also been a live birth than if the earlier pregnancy was spontaneous abortion. The data also indicate that chances of a pregnancy ending into induced abortion is 7 times more if the earlier pregnancy has also been aborted than if it was a live birth.

Figure 4.4 Per cent distribution of (i+1)th outcome by nature of outcome according to the nature of ith outcome, 1976-2000



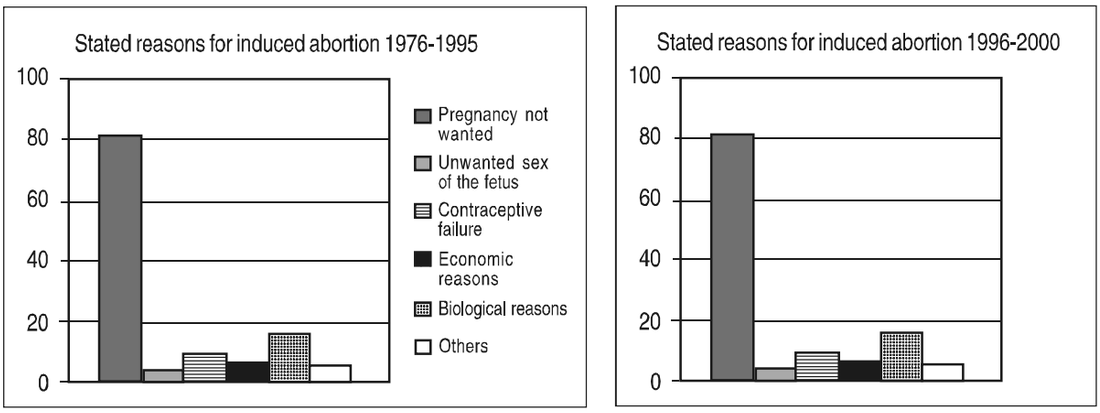
4.3 REASONS FOR INDUCED ABORTIONS

Over the years the incidence of induced abortion is increasing, logically then one need to find out what are the reasons that women have stated for inducing their pregnancies.

Figure 4.5 shows the reasons given by women as to why they terminated the pregnancy between the period 1976-1995 and 1996-2000. For the period 1976-2000 about 25 per cent (biological reasons[14] and contraceptive failure taken together) of the abortions that were terminated were within the framework of the MTP act. The reasons for abortion outside the framework of MTP are multifarious. They vary from pregnancy not wanted, unwanted sex of the foetus to economic reasons. For the vast majority in which an abortion was attempted, women stated that the pregnancy was not wanted. This high percentage of unwanted pregnancy brings the issue of accessibility and demand for contraceptive practices, especially temporary (non-limiting) methods. According to NFHS-2 Maharashtra, the unmet need for contraception of currently married women aged 20-29 is around 19.4, where the incidence of abortion is also high, as compared to the unmet need of 13 per cent for all married women aged 13-49 years.

[14] Biological reasons means where the pregnancy is terminated on the following grounds – a) danger to the life of the pregnant woman, b) grave injury to the physical health of the pregnant woman, c) grave injury to the mental health of the pregnant woman and d) substantial risk that if the child was born, it would suffer from such physical or mental abnormalities as to be seriously handicapped. These are the conditions listed in the MTP act for which an woman can terminate her pregnancy legally.

Figure 4.5: Reasons stated for inducing abortion, 1976-2000



A comparision of the graph show that while sex-selective abortion was only 4 per cent between 1976-95, it more than tripled to about 12 per cent for the period 1996-2000, though it is likely that this percentage is under-reported. This might to some extent explain the alarming decrease of female sex ratio as reported in 2001 census. We would discuss this issue in more details later.

Table 4.12: Percentage distribution* of reason for induced abortion by selected demographic variable, 1996-2000

Demographic variables	Reasons for induced abortion						No. of induced abortions
	Pregnancy not wanted	Unwanted sex of the fetus	Contraceptive failure	Economic reasons	Biological reasons	Others	
Place of residence							
Rural	67.6	19.0	9.5	1.4	24.2	5.4	74
Urban	78.8	5.8	3.0	12.7	26.1	5.6	67
Mumbai	84.6	3.8	0.0	26.9	7.7	0.0	26
Rest urban	66.0	7.2	5.1	2.5	39.2	9.5	41
Standard of living							
Lower	77.7	33.7	0.0	11.2	22.0	0.0	9
Middle	66.9	12.0	3.4	9.7	29.7	5.2	57
Higher	72.6	10.4	9.1	4.4	22.1	6.4	75
All abortions	70.6	12.5	6.3	7.0	25.1	5.5	141

** It is multiple responses so the percentage would not add upto100*

Table 4.12 reveals cause of induced abortion by place of residence and standard of living for the time period 1996-2000. As stated earlier, large numbers of pregnancies were terminated due to its unwanted status and do not vary much with either place of stay or standard of living. For this period, only 29 per cent pregnancies were legally terminated. There is a considerable rural-urban difference (it is more than 3 times higher in rural areas than urban areas) regarding number of abortion terminated due to contraceptive failure. Pregnancies terminated due to economic reasons is more than 8 times higher in urban areas than rural areas, with a considerable difference between two types of urban areas (11 times higher in Mumbai than rest

of the urban areas in the state). What is significant to note is that very less percentage of pregnancies were reported to be terminated due to sex selection by people from the higher level of the economic stratum, though in these categories actual number of abortions are much higher. This may be due to the fact that women from this category being more aware of the fact that abortion due to sex selection is illegal and thus may have not stated the actual reasons.

4.4 SEX DETERMINATION TESTS

The study recorded the use of ultrasound during pregnancy and this showed that during the reference period of 1996-2000, 21 per cent of pregnancies had used ultrasound atleast once, and both rural-urban and class differentials in use of this technology were very strong, with urban areas recording 37 per cent and rural 14 per cent and the highest class recording 45 per cent and lowest only 5 per cent. Further the data across time period showed that for each five year period from 1986 the use of sonography was doubling in urban areas and tripling in rural areas and with this growth in use of sonography the juvenile sex ratios were plunging.

Table 4.13 Per cent distribution of pregnancies using ultrasound by place of residence and SLI, 1986-2000

Demographic variable	Time period					
	1986-1990		1991-1995		1996-2000	
	%	No. of preg	%	No. of preg	%	No. of preg
Place of residence						
Rural	1.4	1984	4.1	2102	13.9	2154
Urban	9.4	1141	19.4	1066	37.4	991
Mumbai	21.4	341	33.5	328	52.2	289
Rest urban	4.3	800	13.1	738	31.3	702
Standard of living						
Low	0.6	822	1.7	881	5.3	805
Medium	2.5	1538	7.4	1551	18.0	1568
High	12.0	765	22.3	736	44.7	772
All cases	4.3	3125	9.3	3168	21.3	3145

Given this context, we now examine the rate of utlisation of those prenatal technologies which are used for determining the sex of the foetus.

Maharashtra was among the first states to enact legislation banning misuse of prenatal technologies for determining sex of the child in 1988, but the reality is that the state has a very poor sex ratio as revealed in the latest census figures. Sex ratio of the state drastically declined from 934 in 1991 to 922 in 2001. The states performance in the age category of 0-6 years is even poorer at 917 females per 1000 males. Ironically the thrust on small families and family planning has contributed to this problem. With the stress on one or two children, families want to ensure that they have a male child. The fact that the rate of sex selective tests is

increasing is evident from Figure 4.6. In our study we found two types of tests that were used to identify the sex of the child – sonography[15] and amniocentesis. The data presented here takes into account both the tests, which were used for sex identification.

Figure 4.6 Rate of sex determination test per 100 live birth, 1976-2000

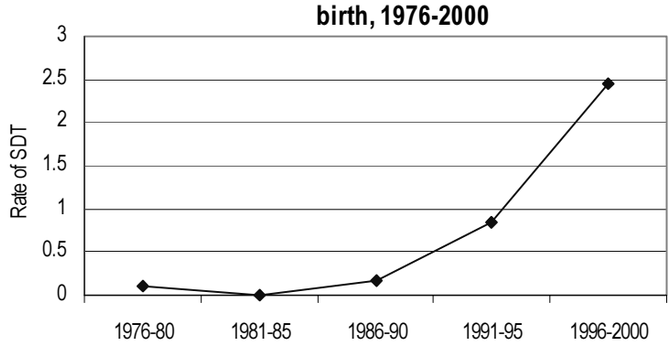


Figure 4.6 shows that the rate of reported sex determination tests per 100 live births increased from 0.2 in 1976-80 to 2.4 in 1996-2000 period. This shows that though the Pre-Natal Diagnostics Techniques (PNDT) Act has come into force from 1994, this has not curbed the misuse of technology for detecting sex of the foetus.

[15] Those sonography tests were not taken for analysis, which was not used to identify the sex of the foetus as reported by the reasearch participant.

Table 4.14 shows that the rate of sex determination test is less among urban women than their rural counterparts, but this trend is because of underreporting by urban women. Yet data show that the rate of sex determination test is seven times more among women from higher standard of living than from women from lower standard of living.

Table 4.14: Rate of sex determination tests per 100 pregnant women, 1976-2000

Demographic variable	Number of pregnant women	Number of sex determination test	Rate of SDT per 100 pregnant women
Place of residence			
Rural	2622	80	3.00
Urban	1569	20	1.30
Mumbai	527	3	0.56
Rest urban	1042	17	1.63
Standard of living			
Lower	968	6	0.61
Middle	2042	45	2.20
Higher	1181	49	4.14
Years of schooling			
No schooling	1710	26	1.52
1-7 years	1219	38	3.12
8-12 years	1019	30	2.94
More than 12 years	243	6	2.47
Religion			
Hindu	3528	89	2.52
Muslim	379	7	1.85
Buddhist	171	0	0.00
Others	113	4	3.54
Social groups			
Upper castes	257	7	2.72
DPP	1232	51	4.14
Other backward castes	1038	22	2.12
Scheduled castes	391	6	1.53
Scheduled tribes	500	3	0.60
Caste unclassified	110	0	0.00
Non-Hindus	663	11	1.66
Total	4191	100	2.39

The rate of sex determination test is generally higher among educated women than women who did not go to school. When the data is analysed by religion, generally women from the 'other religion' category had higher rate of sex determination test than women who were Hindu, Muslim or Buddhist. Among the different castes of Hindus, the rate of sex determination test is highest among women from dominant peasant caste, followed by upper caste women. The lowest rate of sex determination test was found among the scheduled tribes.

An analysis of sex ratios at birth provides insight into the extent of specific sex selective abortions because 'normal' sex ratios at birth are found to lie between 103 and 106 males per 100 females for most societies. Therefore, the sex ratio at birth above 106 suggests that prebirth interventions are reducing the likelihood of a female birth. In our survey, the sex ratio at birth is 109 males per 100 females.[16] Though caution must be exercised while using survey data on sex ratios at birth but still one can make an unmistakable assumption that a significant proportion of couples in Maharashtra have succeeded in avoiding the birth of girls while ensuring the birth of boys.

Based on the above assumption, our survey should have captured more cases of sex selective abortions than that is recorded. Annexure XIV gives the estimation of underreporting of sex selective abortions.

4.5 CONCLUSION

The findings vividly show that in recent years the numbers of abortions are rising, though there are differences over various categories of people. The findings demonstrate that in order to realise reproductive rights and choice for women, it is essential to consider issue like accessibility and availability of safe abortion services to all categories of women and would not be a reality unless we change gears towards a rights-based approach. These issues will be dealt in detail in the following chapters.

[16] Our survey found 8162 males against 7475 females at birth, i.e., 105:96

CHAPTER 5

REPORTED POST-ABORTION PROBLEMS AND TREATMENT

5.1 INTRODUCTION

There is a growing recognition that abortion morbidity in particular and gynaecological morbidity in general is an important health problem among women in India. Yet information on the levels and patterns of abortion morbidity experienced by women is sparse. There are a few community based gynaecological studies[1] [2] [3] [4] but they do not shed much light to abortion morbidity. This is probably the first time in the country that post-abortion problems have been recorded in a large-scale study.

As mentioned earlier, data about post-abortion problems collected here is based on women's perception of problems they had post- abortion. Recording abortion problems through retrospective studies has its inherent problems, as interpretation of complication rates of abortion will depend on a number of variables. These include the woman's prior state of health, the gestation age of the foetus, the abortion method used, the type of abortion provider, the conditions under which the abortion was performed and the method of data collection. Many times it so happens that post abortion morbidity is associated with contraceptive usage immediately after abortion, and thus it becomes difficult to separate morbidity arising out of the two. However, the importance of reported morbidity study lies in the fact it is an economical method to gauge the extent of post abortion morbidity and the need and demand for post abortion care.

Morbidity, or a feeling of being sick, is a subjective phenomenon, and its measurement is characterised by conceptual limitations and by limitations in available measurement methods. We have to be cautious about analyzing and interpreting the prevalence of self reported morbidity.

In Chapter 2 we have mentioned the methodology adopted to record abortion problem. In this chapter we have discussed in details abortion problem following both types of abortions, which occurred between 1996-2000 and have not taken into account problems resulting due to stillbirth.

5.2 OVERALL REPORTED POST-ABORTION PROBLEM

As we have seen in earlier chapter, during the period 1996-2000, 141 induced abortions and 160 spontaneous abortions were recorded. Of these, 53 induced abortions and 54 spontaneous abortions did not report

---

[1] Parikh, I., Taskar, V., Dharap, N., et al. (undated): *Gynaecological Morbidity among Woman in a Bombay's slum*, Draft Report, Streehitakarini, Bombay.

[2] Madhiwalla, N., Nandraj, S. and Sinha, R. (2000): *Health, Households and Women's Lives: A study of Illness and Childbearing among Women in Nasik district*, CEHAT, Mumbai.

[3] Bang, R. and Bang, A. (1989): A Community Study of Gynaecological Disease in Indian Villages. In Zeidenstein, S. and Moore, K. (eds.) *Learning about Sexuality - A Practical Beginning*, The Population Council, New York.

[4] Bhatia, J.C. and Cleland, J. (1995): Self-reported Symptoms of Gynaecological Morbidity and their Treatment in South India, *Studies in Family Planning*, Vol. 26(4), pp. 203-216.

having any problems. Abortions in urban areas reported lower complications than abortions of women from rural areas and of them women from Mumbai were better placed. For instance, while only 30 per cent of induced abortions from rural areas did not have any complication, it was 48 per cent for abortions from urban areas and is 54 per cent for induced abortions from Mumbai as against 46 per cent from rest of the urban areas of the state. The same trend is true for spontaneous abortions, though the difference between abortions not having problems was more favourable towards urban areas than in rural areas. Segregation of data from urban areas shows that 63 per cent of spontaneous abortions did not have any problems in Mumbai as against 51 per cent abortions from the rest of the urban areas of the state.

Post abortion problem can be an immediate complication like uterine perforation or mid term complication like vaginities or can even be long-term complications like secondary infertility. As retrospective self-reported survey data does not allow classification of symptoms to a particular illness episode, therefore the data here is presented in terms of sufferings/problems that women have reported. Prevalence of different abortion problem at different time periods after abortion is presented in Table 5.1.

Table 5.1: Per cent distribution of post abortion reported symptoms by time period, 1996-2000

Reported symptoms	Spontaneous abortion					Induced abortion				
	With in 24 hrs	2nd to 7th day	2nd to 6th week	After 6th week	Total	With in 24 hrs	2nd to 7th day	2nd to 6th week	After 6th week	Total
Excessive bleeding	38.4	33.3	0.0	0.0	31.6	44.4	12.5	0.0	0.0	27.6
Pains & aches	31.5	29.2	0.0	25.0	28.1	27.0	12.5	20.0	9.1	21.9
Early infections	8.2	4.2	0.0	0.0	6.1	1.6	37.5	6.7	0.0	7.6
Menstrual Irregularities	0.0	0.0	11.1	37.5	3.5	0.0	0.0	46.7	9.1	8.6
Vaginal discharge	5.5	16.7	11.1	12.5	8.8	0.0	0.0	13.3	9.1	2.9
Other symptoms[5]	16.4	16.7	77.8	25.0	21.9	27.0	37.5	13.3	72.7	31.4
No. of symptoms	73	24	9	8	114	63	16	15	11	105 [1]

The above figures are column percentages
The figures in parenthesis indicates number of abortions with reported problems
[1] *Data on morbidity of two induced abortions were missing.*

As evident Table 5.1, bleeding, pain and symptoms that were clubbed in the 'other' category were the most common problems that women had to suffer after both types of abortion. More women who had an induced abortion suffered from early infections and menstrual irregularities than spontaneous abortions. Vaginal discharge was relatively more common among women who had a spontaneous abortion. The data also revealed that more episodes of problems are reported within 24 hours of abortion.

5.3 DIFFERENTIALS OF POST-ABORTION PROBLEM

Table 5.2 revealed that problems reported per abortion are marginally more the in case of induced abortion (0.75) than in case of spontaneous abortion (0.71). When we disaggregate problems experienced due to spontaneous abortion by place of residence, we see that post abortion reported problem is 1.7 times higher

[5] Other symptoms include problems like high blood pressure, breathlessness, vomiting, no control over urinary bladder and others.

in the rural areas than in the urban areas and is more than two times higher than in Mumbai. This difference between rural and other areas is slightly less in case of induced abortion. When we disaggregate Mumbai from the urban sample we find that Mumbai women were far better placed than rest of the urban areas in the state. This again highlights the fact that improved access to abortion facilities decreases abortion related problems.

Table 5.2: Mean prevalence of post-abortion problem per abortion by selected characteristic of women, 1996-2000

Characteristic of women	Spontaneous abortion	Induced abortion
Place of residence		
Rural	0.83	0.81
Urban	0.50	0.67
Mumbai	0.35	0.50
Rest urban	0.60	0.78
Standard of living		
Low	0.88	0.89
Medium	0.76	0.88
High	0.55	0.63
Type of health care provider accessed for abortion		
Public heath care provider	0.59	0.83
Private heath care provider	0.73	0.73
Other	1.00	0.75
Treatment not taken	0.72	NA
Age at abortion		
Less than 20	0.81	0.69
20-24	0.70	0.74
25-29	0.52	0.83
30+	0.60	0.58
Pregnancy order		
1	0.65	0.43
2	0.70	0.78
3-4	0.79	0.76
5+	0.80	0.72
Length of gestation		
8 weeks	0.69	0.74
9-12 weeks	0.66	0.64
13-20 weeks	0.80	0.97
21-28 weeks	0.67	0.50
Total	0.71 (160)	0.75 (141)
The figures in parenthesis indicate number of abortions.		

Given the fact that abortion services had to be bought from the market and thus one expects that the lack of purchasing power would have significant effect on post abortion problems. The difference between the low and high groups was 1.4 times for induced abortions and in the case of spontaneous abortions the gap was 1.6 times, even though as many as 16 per cent of spontaneous abortions were from the lowest economic group. This gap is again due to poverty restricting access as we have seen that of the 22 per cent of

spontaneous abortions, which did not seek any treatment, a large proportion of these were from the low economic group.

For spontaneous abortions, women using private health care providers for managing abortion, reported more symptoms of abortion morbidity than who used government health care providers, whereas in case of induced abortion a reverse trend is observed. As stated earlier, a significant proportion of spontaneous abortion was managed without taking any treatment, and in those cases per-abortion problem was 0.72.

Post-abortion problems were higher, especially in case of spontaneous abortion, when age at abortion is less than 20 years. The data generally show that the mean prevalence of post-abortion problem is higher in higher order pregnancy than in lower order pregnancy. The data show that the prevalence of post-abortion problems was more when abortion, both induced and spontaneous, occurred after 13 weeks of gestation.

Table 5.3 show type of problems prevalent by selected characteristic of women. Many abortions, both induced and spontaneous, in rural areas resulted in excessive bleeding. Induced abortions from urban areas comparatively suffered more from problems of excessive bleeding and menstrual irregularities. As far as early infections are concerned, there was not much difference between rural and urban areas in case of induced abortion, but for spontaneous abortions, abortions from rural areas had about twice more infections than urban areas. This may have something to do with the type of personal hygiene that is practiced by women after abortion. What is significant from the data is a near absence of problems of vaginal discharge and early infections in abortions of women from Mumbai for induced abortions.

Table 5.3: Percentage distribution of type of abortion problem by selected characteristic of women, 1996-2000

Characteristic of women	**Spontaneous Abortion**							**Induced Abortion**						
	Excessive bleeding	Pains & aches	Early infections	Menstrual Irregularity	Vaginal Discharge	Other symptoms	**Total symptoms**	Excessive bleeding	Pains & aches	Early infections	Menstrual Irregularity	Vaginal Discharge	Other symptoms	**Total symptoms**
Place of residence														
Rural	31.8	28.4	6.8	3.4	9.1	20.5	85 (80)	25.0	21.7	8.3	5.0	3.3	36.7	60 (51)
Urban	30.8	26.9	3.8	3.8	7.7	26.9	29 (26)	31.1	22.2	8.9	11.1	2.2	24.4	45 (35)
Mumbai	28.6	28.6	0.0	0.0	14.3	28.6	8 (7)	23.1	23.1	0.0	30.8	0.0	23.1	13 (12)
Rest urban	31.6	26.3	5.5	5.5	5.5	26.3	21 (19)	33.3	21.2	12.1	3.0	6.1	24.2	32 (22)
Standard of living														
Low	27.3	27.3	9.1	4.5	9.1	22.7	22 (19)	37.5	0.0	12.5	0.0	0.0	50.0	8 (6)
Medium	30.8	33.8	6.2	1.5	10.8	16.9	64 (60)	32.0	28.0	10.0	8.0	2.0	20.0	50 (38)
High	37.0	14.8	3.7	7.4	3.7	33.3	28 (27)	21.3	19.1	4.3	10.6	4.3	40.4	47(42)
Total	31.6	28.1	6.1	3.5	8.8	21.9	114(106)	27.6	21.9	7.6	8.6	2.9	31.4	105(86)

The above figures indicates row percentages
The figures in parenthesis indicates number of abortions with reported problems

The prevalence of abortion related problems among women from different standard of living is on expected lines. Twenty two per cent induced abortions in the low SLI category reported no problem against 44 per cent induced abortions among women from higher standard of living. The data is also on the same lines for

spontaneous abortions. Table 5.3 shows that the problem of excessive bleeding is also more prevalent in abortions of women from the lower standard of living among women experiencing induced abortions. As far as infections are concerned, for both types of abortions, women from low standard of living experienced twice more morbidity than women from higher standard of living. Data thus indicate that there is a need to provide safe abortion management services to women from rural and lower economic backgrounds as excessive bleeding and infections might lead to maternal mortality. Also women from lower socio-economic strata are more likely to use unsafe private providers because of economic constraints in accessing safe private provider.

The prevalence of different types of post-abortion problems were analysed with age at abortion, parity, and length of gestation, but no specific trend was observed.

5.4 TREATMENT SOUGHT FOR POST-ABORTION PROBLEM

Table 5.4 shows treatment seeing behaviour among women who had an abortion between 1996-2000, and treatment seeking behaviour in case of post-abortion problem. When we see the rural urban difference in case of induced abortion, the data show that utilisation of health services for post-abortion problem was more among rural women than urban women, which may be because many women in urban areas never developed any complication. In case of spontaneous abortion, a significant proportion of post-abortion problem were not treated in rural areas, which was also true for abortion management. This non-utilisation of heath care services may be due to non-availability of accessible health care services in rural areas in case of emergencies like spontaneous abortions, unlike induced abortions, which are mostly, planned activity.

Table 5.4: Percentage distribution of post-abortion problem by treatment seeking behaviour by selected characteristic of women, 1996-2000

Characteristic	Spontaneous abortion – treatment sought			Induced abortion – treatment sought[1]		
of women	Yes	No	No problem	Yes	No	No problem
Place of residence						
Rural	56.6	22.2	21.2	61.1	12.5	26.4
Urban	36.1	08.2	55.7	33.8	18.3	47.9
Mumbai	27.3	00.0	72.7	32.0	12.0	56.0
Rest urban	41.0	12.8	46.2	34.8	21.7	43.5
Standard of living						
Low	56.0	20.0	24.0	55.6	22.2	22.2
Medium	46.4	23.8	29.8	52.6	17.5	29.8
High	48.1	03.8	48.1	43.4	11.8	44.7
Total	48.4 (78)	17.1 (28)	34.5 (54)	47.6 (68)	15.4 (18)	37.1 (53)

The above figures indicates row percentages
Figures in parenthesis indicates number of abortions
[1] *Data on morbidity and treatment seeking of two induced abortions were missing*

Non - utilisation of health services for post-abortion problem was also common among women from lower and medium economic classes. In case of women from lower economic background the reason may be

lack of purchasing power (3.8 per cent of spontaneous abortion problem was not treated due to economic problem), while for women from better economic background the reason may be that they did not feel the need to seek treatment. When women were asked the reasons for not seeking treatment for abortion problem, the main reason given were that the woman felt that there is no need for treatment and that the doctor or people said some amount of problem is normal. Apart from these reasons, in the case of spontaneous abortion, 2.5 per cent of abortion problem was not treated due to in-laws restriction. In a majority of the cases, women went to the same doctor for treating their post abortion problem as they did for abortion management.

Table 5.5: Duration of treatment in days taken for post-abortion reported problem by selected characteristic of women, 1996-2000

Characteristic of women	Spontaneous abortion		Induced abortion	
	Mean	Abns with problems	Mean	Abns with problems
Place of residence				
Rural	35.1	80	18.8	51
Urban	25.1	26	16.1	35
Mumbai	50.1	7	12.2	13
Rest urban	14.6	19	18.7	22
Standard of living				
Low	28.0	19	9.5	6
Medium	38.7	60	8.8	38
High	21.9	27	26.0	42
Total	32.5	106	17.3	86

As evident from Table 5.5, mean days of treatment for both types of abortion was more in case of rural areas that in urban areas, which may be due to the reason that complications were more in abortions from rural areas and therefore they had to take much longer treatment. Mean days of treatment taken was higher for Mumbai in case of spontaneous abortion, as on a single instance a women had suffered lot of complications following her miscarriage, which has increased the mean. In case of induced abortion, mean number of days of treatment by women from rest of urban areas (18.7) was more than by women from Mumbai (12.2).

5.5 CONCLUSIONS

Data shows that problems from spontaneous and induced abortion were not uncommon. Abortions as such have certain inherent problems, an attempt therefore must be made to minimize the complications arising out of medical interventions. Excessive bleeding and pain are the most common problems that women had to suffer from. Any intervention directed towards improving post abortion medical care should have specific intervention strategies to manage excessive bleeding, which would also help in reducing maternal mortality. Abortion is one of the major causes of maternal mortality.

The data on problem and its management in our study has its own limitations. For example, many a times it was difficult for the woman to report exact onset of abortion problem. Also it becomes difficult for a woman to differentiate between bleeding that is normal after abortion and excessive bleeding that is not 'normal'. Also as we all know perception about illness influences reporting of problem, and thus many problems may have gone unreported or over reported. In addition the data on morbidity may suffer recall lapse.

CHAPTER 6

ISSUES OF ACCESS AND CARE

6.1 INTRODUCTION

In this chapter we attempt to understand issues of access and care in the event of spontaneous and induced abortions. For the purpose of this study, access refers to the distance, mode of travel to the availed health care facilities and the type of health care (public/private) accessed. Understandably, issues of access are shaped by a complexity of factors like the rural/ urban nature of the PSU, the standard of living of the respondents, and the physical distance to the health care facilities. In the course of this chapter, we shall dwell upon such aspects to highlight differentials and commonalities in access to health care facilities among abortion seekers.

The issue of care in the present study has been sought to be understood chiefly along the following two dimensions: a) the type of care received at the availed health care facilities (type of treatment received, period of stay, post abortion counseling received, if any, etc); b) home based support (sharing of workload, rest taken, etc) and decision making accorded to the woman in the event of abortion. As before, a number of working hypotheses shall inform the analysis of the issues of care in the present chapter. A section of the current chapter shall also deal with the nature of facilities accessed and type of tests conducted for determining the sex of the foetus.

6.2 DETERMINANTS OF ACCESS

Distance

For episodes of spontaneous abortions across the state, and across all socio-economic groups, the mean distance of a health care provider was 9.1 km away from the place of stay of the service seeker. However, the median distance of the health care provider was 2.0 km from the place of stay of the service seeker, indicating thereby that care for half the cases was sought within close proximity (2.0 km) of the service seeker. Average distance to facilities offering services for induced abortions was farther than that for spontaneous abortions. For episodes of induced abortion, the mean distance was 11.8 km while the median was 3.4 km.

Table 6.1 Mean and median distances (in km) to provider by type of residence, 1996-2000

Type of provider		Spontaneous abortion		Induced abortion	
		Mean	Median	Mean	Median
Rural	Public	21.6	16.0	24.9	25.2
	Private	15.3	10.0	19.4	12.0
Urban	Public	6.3	4.0	3.7	1.4
	Private	4.2	2.0	4.0	1.0
Mumbai	Public	4.0	3.5	1.5	1.5
	Private	2.4	2.0	1.9	1.0
Rest Urban	Public	8.1	4.0	4.9	1.4
	Private	6.0	2.4	5.6	1.0
Total		9.1	2.0	11.8	3.4

Table 6.1 gives the details about mean and median distances to the type of provider by type of the PSU. In terms of the distances of the type of provider vis-à-vis the type of PSU, it is clear from the existing data that, in urban areas, facilities (whether public or private) are always situated considerably nearer than they are in rural areas. In the city of Mumbai, the better provisioning of the health care facilities in the metropolis is indicated by the fact that the mean distance to any type of facility (whether public or private) for both spontaneous as well as induced abortion services is by far the lowest in comparison to that for rural and urban areas. If we were to analyse the data further by calculating the distance of the type of provider (public/ private) by the type of PSU (rural or urban, Mumbai and rest urban), then for episodes of spontaneous abortions, both the mean and median distances of the private facilities accessed are lower than those for public facilities in rural as well as urban settings (including Mumbai and rest urban). For induced abortion related services, in rural areas, the mean and median distances of the private services accessed continue to be lower than those for the public services. In urban areas (including Mumbai) however, the mean distances are higher for the private providers than they are for the public providers and this may be due to the spatial dispersals of the private providers accessed. The median distances, however, are smaller for the private providers in urban areas also, again indicating the fact that for at least half the events of access to health care provider, the private health care providers were situated at nearer distances than the public health care facilities.

Type of provider accessed

On the whole, the services of the private sector were predominantly sought for both spontaneous as well as induced abortions registering high percentages of 62.3 per cent for spontaneous abortions and 79.3 per cent for induced abortions. The public sector came a distant second in both the cases, scoring 15.6 per cent and 17.9 per cent respectively for spontaneous and induced abortions. It is noteworthy that a considerably high percentage (21.6%) of the cases of spontaneous abortions did not seek treatment for the same. Table 6.2 has the details.

Table 6.2 Percentage distributions of abortions by type of provider accessed, 1996-2000

Type of provider	Spontaneous abortion	Induced abortion
Public	15.6	17.9
Private	62.3	79.3
Other providers	0.5	2.8
Treatment not taken	21.6	—
No. of abortions	160	141
The above figures are column percentages		

The private sector continues to be the dominant sector accessed when we analyse the data against the type of residence (Table 6.3). The services of the private sector are sought in a majority of cases in both rural as well as urban settings for both spontaneous as well as induced abortions, though there are some differences in the patterns emerging. For spontaneous abortions, treatment not taken is higher in rural areas than it is in the urban areas. The public sector is also comparatively less utilized in rural areas than it is in urban areas for spontaneous abortion related services. For services related to induced abortions, the private sector continues to be the dominant player in both rural and urban settings (including Mumbai), though in rural areas, the services of the public sector are more utilized in comparison to their utilization in urban areas (including Mumbai).

Table 6.3 Percentage distributions of abortions by type of provider accessed and type of residence, 1996-2000

Type of provider	Spontaneous abortion				Induced abortion			
	Rural	Urban	Mumbai	Rest urban	Rural	Urban	Mumbai	Rest urban
Public	12.9	21.1	19.4	22.0	21.4	14.4	13.2	15.4
Private	62.1	63.2	66.7	58.5	75.3	83.3	84.2	82.7
Other providers	0.8	0.0	0.0	0.0	3.4	2.2	2.6	1.9
Treatment not taken	24.2	15.8	13.9	19.5	—	—	—	—
No. of abortions	102	58	23	35	74	67	26	41
The above figures are column percentages								

When the data are cross tabulated against standard of living of the abortion seeker (as denoted by the standard of living index (SLI) to which they belong), again, we find that, for spontaneous abortions, the private sector is the most commonly accessed sector across the three SLI. However, in comparison to the medium and high SLI, service seekers from the low SLI tend to use the public sector in greater percentages. The percentage of women in the 'treatment not taken' category is considerable for all the three SLI, though it is highest (37.9%) for the low SLI. In the case of induced abortions also, higher percentages of women of the low SLI access the public sector in comparison to the women belonging to the other two SLI. Table 6.4 gives details about the type of provider accessed cross tabulated against type of PSU and the SLI.

Table 6.4 Percentage distributions of abortions by type of provider accessed and SLI, 1996-2000

Standard of living	Spontaneous abortion			Induced abortion		
	Low	Medium	High	Low	Medium	High
Public	24.1	17.5	8.8	40.0	23.0	8.4
Private	37.9	62.1	73.5	50.0	74.3	86.3
Other providers	0.0	0.0	1.5	10.0	2.7	5.3
Treatment not taken	37.9	20.4	16.2	—	—	—
No. of abortions	25	84	51	9	57	75
The above figures are column percentages						

Reasons for choice of provider

The type of provider accessed is a function of many factors. Among other things, it depends on the accessibility to other providers, the (perceived) quality of services associated with a particular type of provider, reasons like long waiting period or behaviour patterns of the staff, which may inhibit people from availing a particular type of health care facility, etc. We categorized the gamut of reasons for choosing a given type of health care facility into four broad categories:

1) Positive choice (PC): where (perceived or real) positive attributes of the given type of facility guide the decision of choosing the given facility;
2) Negative choice (NC): where (perceived or real) negative attributes of a type of facility guide the decision of choosing other types of facilities;
3) Specific situations (SS): where the specificities of a given situation (e.g. had to be taken to a health care facility in an emergency) have guided the availing of a particular type of facility; and
4) Other reasons: which is a residual category of reasons.

Table 6.5 shows the reasons for choosing a particular type of health care facility in the three different contexts of a) generally, when somebody in the household falls sick; b) in cases of spontaneous abortions, and c) in cases of induced abortions. Generally when somebody in the household fell sick, the single largest category of reason that guided the choice of a facility were the positive attributes of the private sector, like its access and effectiveness. Among the host of reasons cited for choosing private health care facilities as a negative choice, the absence of a public health care facility nearby and the lack of attention paid at public health care facilities were the prime ones, apart from reasons like unsuitable timings of the public health care facilities, non availability of medicines there, etc. The private sector may also be accessed in specific situations like minor ailments. Generally, the overwhelming reason cited for choosing a public health care facility as a positive choice (PC) was the free treatment available at such facilities. Inability to afford treatment at other types of health care facilities was the negative choice (NC) for choosing public health care facilities. Specific situations that may warrant the availing of public health care facilities included among other reasons, for (perceived) large ailments and for services like family planning and delivery.

Table 6.5 Percentage distributions of providers accessed by reasons for choice, 1996-2000

Reasons for choice of provider	General health care	Spontaneous abortion	Induced abortion
Public (PC)	11.0	6.7	8.0
Public (NC)	2.7	13.0	2.4
Public (SS)	11.5	0.0	0.7
Public (other)	0.2	0.0	0.4
Private (PC)	31.8	66.0	78.1
Private (NC)	35.3	14.3	8.3
Private (SS)	4.6	0.0	2.1
Private (other)	2.9	0.0	0.0

Note: PC - Positive Choice; NC - Negative Choice; SS - Specific Situations
The above figures are column percentages

For services related to spontaneous abortions, the reason most frequently cited for choosing a public health care facility as a positive choice was the free treatment received. The negative choice guiding the choice of public health care facilities was often the respondents' inability to pay for treatment elsewhere. The choice of a private health care facility was guided by reasons like access and effectiveness (positive choices) and due to suggestions from friends and relatives and unsuitable timings of the public health care facilities (negative choices). For induced abortion related services, the reasons most often cited for choosing a public health care facility were free treatment offered (positive choice) and inability to pay for services elsewhere (negative choices). Choice of private health care facilities were mostly for reasons like accessibility, presence of good doctors, the doctor being the family physician, and the doctor being a woman (positive choices), and on the suggestions of people/ relatives (negative choice).

6.3 MEDICAL CARE AND ITS DIMENSIONS

Type of treatment received

The type of treatment received is an important element of care. The data for type of treatment received for spontaneous and induced abortions is suggestive of the difference in type of treatment received for the two types of abortions. As already stated, in the case of spontaneous abortions, treatment not taken constitutes a high percentage (21.6%) of the cases. Excluding cases where treatment was not taken, among the types of treatment taken, all the four lines of treatment (viz.,administration of D&C, being given injections, being given medicines and advice for investigative tests) were followed almost in equal measure, with being given medicines constituting the single highest category. In contrast, in the case of induced abortions, administration of D&C accounts for the highest percentage (39.9%) of the total treatment cases, followed by being given medicines (21.9%) and advice for investigative tests like sonography, urine tests, etc (18.6%). The percentage of treatment not being given to service seekers is lesser in the case of induced abortions (1.0%) than it is for spontaneous abortions (3.6%).In case of both spontaneous and induced abortions, there have been instances where treatment was not given at the accessed facilities. This is due to a variety of reasons like the doctor not being available at the facility, the facility being closed at the given time, abortion services not being available at the facility, or even being denied abortion services. Table 6.6 gives details of the type of treatment received for spontaneous and induced abortions.

Table 6.6 Percentage distribution of abortions by type of treatment received, 1996-2000

Type of treatment	Spontaneous abortion	Induced abortion
Done D&C	20.5	39.9
Given injections	23.7	17.2
Given medicines	28.1	21.9
Others (sonography advice, saline tests, urine tests, etc)	24.2	18.6
Treatment not given	3.6	1.0
The above figures are column percentages		

Type of treatment received by serial number of provider

A service seeker may have to access a number of providers for reasons of (perceived) inadequacy in treatment as well as due to referrals from health care facilities. The multiplicity of the number of providers per episode of spontaneous /induced abortion is also indicative of the varying standards of care that are prevalent across health care facilities offering abortion related services.

Table 6.7 gives details about the number of providers accessed per episode of spontaneous and induced abortion. The data on the number of providers show that for the 160 episodes of spontaneous abortions (during the reference period), a total of 199 providers were accessed, and for the 141 episodes of induced abortions (during the reference period), a total of 179 providers were accessed. 10.7 per cent of the cases in spontaneous abortions accessed three providers or more per episode of miscarriage, with the maximum number of providers being accessed going upto nine in one episode. In the case of induced abortions, 4.5 per cent of the cases accessed three providers or more. The maximum number of providers accessed went upto five for an episode of induced abortion.

Table 6.7 Percentage distribution of abortions by serial number of providers, 1996-2000

Serial no. of provider	Spontaneous abortion		Induced abortion	
	Number	Percent	Number	Percent
1	148	74.5	142	79.3
2	29	14.7	29	16.1
3	10	3.9	4	2.3
4	4	2.0	3	1.7
5	4	2.0	1	0.5
6	1	0.7	-	-
7	1	0.7	-	-
8	1	0.7	-	-
9	1	0.7	-	-
Total no. of providers	199	100.0	179	100.0
The above figures are column percentages				

We sought to see whether the serial number of provider had a bearing on the type of treatment received. For spontaneous abortion related services, the type of treatment given tends to become largely consultative in nature as the serial number of the provider increases with providers coming at higher numbers (like provider number 6, 7, 8, 9) offering advice on medicines and advising investigative tests mainly. An overwhelming high majority of the cases of D&C, giving injections and medicines is carried out by the providers initially accessed. For induced abortion related services, however, the pattern differed slightly. The data show that in cases where multiple number of providers had been accessed, higher number of providers (like provider number 3, 4, and 5) also intervened surgically, by carrying out D&C. As in the case of spontaneous abortions, providers at higher levels advise investigative tests also. Table 6.8 gives the details.

Table 6.8 Percentage distribution of treatment received by serial number of provider, 1996-2000

Provider no.	Spontaneous abortion						Induced abortion					
	D&C	Injec-tions	Medic-ines	Contra-ceptiv Pills*	Other advice[1]	Treatment not given	D&C	Injec tions	Medic ines	Contrac eptive Pills	Other advice	Treatment not given
1	79.1	83.4	71.0	-	61.9	63.6	79.8	77.3	82.4	100.0	70.9	100.0
2	16.2	13.9	16.3	-	17.8	18.2	17.5	20.8	14.3	0.0	18.2	0.0
3	1.6	1.4	3.6	-	7.1	9.1	1.0	0.0	3.2	0.0	5.6	0.0
4	1.6	1.3	1.3	-	4.2	9.1	1.8	0.0	0.0	0.0	1.8	0.0
5	1.6	0.0	2.5	-	2.9	0.0	0.0	1.9	0.0	0.0	3.5	0.0
6	0.0	0.0	1.3	-	1.5	0.0	-	-	-	-	-	-
7	0.0	0.0	1.3	-	1.5	0.0	-	-	-	-	-	-
8	0.0	0.0	1.3	-	1.5	0.0	-	-	-	-	-	-
9	0.0	0.0	1.3	-	1.5	0.0	-	-	-	-	-	-

The above figures Indicates column percentages

** In the section on spontaneous abortion, question on whether contraceptive pills were given was not asked.*

[1] *Other advice means investigative tests, etc*

Type of treatment received by type of provider

It is widely understood that the type of provider accessed is a significant determinant of the type of treatment received. The type of treatment administered by the private sector especially is understood to be dictated by profit making concerns rather than being informed by medical considerations alone. The data was analysed from this point of view. Our findings reveal that, for spontaneous abortions, D&C is administered in larger percentages by the public providers as also are investigative tests advised. Treatment not given by public providers is more than ten times higher than the corresponding percentages for the private providers. However, when it comes to giving injections or giving medicines, the private sector registers higher percentage points than the public sector. For induced abortions, D&C is administered in the private sector in far larger percentages (74.2%) than it is in the public sector (35.2%). There is not considerable difference between the two types of providers when it comes to giving injections or giving medicines, though the percentages of giving medicines is considerably higher for the category of 'other providers'. It is only the category of 'other providers' that offers contraceptive pills to abortion seekers. Also noteworthy is that investigative tests (e.g. sonography advice, urine tests, etc.) are advised far more by the public health care providers than their private counterparts. Table 6.9 gives details of the type of treatment administered by the type of provider.

Table 6.9 Percentage distribution of type of treatment received by the type of provider, 1996-2000

Type of treatment	Spontaneous abortion						Induced abortion					
	D&C	Injec-tions	Medic-ines	Contra-ceptive Pills*	Other advice	Treatment not given	D&C	Injec-tions	Medic-ines	Contrac-eptive Pills	Other advice	Treatment not given
Public	46.1	41.9	41.3	-	58.0	25.1	35.2	28.0	37.4	0.0	51.4	10.0
Private	38.3	47.0	58.0	-	40.3	2.4	74.2	29.4	35.0	0.0	27.4	0.0
Other providers	0.0	0.0	0.0	-	1.7	0.0	26.5	11.9	49.5	49.8	11.9	0.0

The above figures Indicates row percentages
Being multiple responses, figures do not add up to 100.
** In the section on spontaneous abortion, question on whether contraceptive pills were given was not asked.*

Type of treatment received by standard of living

The hypotheses that the type of treatment administered is dictated by concerns other than medical knowledge is further supported by analysis of the data of type of treatment received cross tabulated against standard of living index of the abortion seeker. For spontaneous abortions, D&C is administered more on women of medium and high SLI than on women belonging to low SLI. Investigative tests too are advised more for women belonging to medium and high SLI than for women of low SLI. For induced abortions also, the data show that abortion seekers from medium and high SLI are subject to higher percentages of D&C than those in the lower SLI. Women belonging to medium and high SLI are also advised investigative tests in far greater percentages than those belonging to the lower SLI. When it comes to giving medicines, though, the percentages are higher for women belonging to the lower SLI than for the other two SLI groups. Thus, for both types of abortions, it is the purchasing power of the service seeker that is a determinant of the type of treatment received. Table 6.10 gives details about the type of treatment received cross tabulated against the SLI.

Table 6.10 Percentage distribution of type of treatment received by SLI, 1996-2000

Type of treatment	Spontaneous abortion						Induced abortion					
	D&C	Injec-tions	Medic-ines	Contra-ceptive Pills*	Other advice[1]	Treatment not given	D&C	Injec-tions	Medic-ines	Contra-ceptive Pills	Other advice	Treatment not given
Low	6.3	15.0	16.1	-	6.7	18.5	40.0	30.0	50.0	0.0	10.0	10.0
Medium	48.4	56.9	48.5	-	50.0	72.6	62.2	28.4	37.8	2.7	35.1	2.7
High	45.4	28.1	35.4	-	43.3	8.9	71.0	28.0	33.3	2.2	30.1	0.0

The above figures Indicates row percentages
Being multiple responses, figures do not add up to 100.
[1] *Other advice means investigative tests, etc*
** In the section on spontaneous abortion, question on whether contraceptive pills were given was not asked.*

Period of stay

Very broadly speaking, the period of stay is a proxy for the level of treatment received. More elaborate the treatment, higher will be the period of stay. The present data shows that for spontaneous abortions, across all providers, the mean period of stay was 0.8 days. The mean period of stay is highest for the initial provider accessed and gradually decreases as the serial number of the provider increases, thereby reinforcing the earlier observation that providers coming at higher numbers provide consultative treatment mainly. In comparison, providers accessed initially are most likely to intervene surgically, thereby leading to higher mean periods of stay. However, it may be said here that the data for spontaneous abortions indicate that in the lone case where the ninth provider was accessed, the (mean) period of stay was a high two days which may be suggestive of the fact that in that case, the treatment might have been surgical. In the case of induced abortions, the total mean period of stay is higher than that for spontaneous abortions, indicating that the treatment received for induced abortions is more elaborate and/or more intrusive in nature in comparison to that received for spontaneous abortions. The data on mean period of stay cross tabulated against serial number of providers in the case of induced abortions also support the earlier observation that providers coming in at higher numbers might be intervening surgically as well thereby leading to high mean periods of stay against higher order providers. Table 6.11 gives details of the mean period of stay against serial number of provider for spontaneous as well as induced abortions.

Table 6.11 Mean period of stay (in days) by serial number of provider, 1996-2000

Serial no. of provider	1	2	3	4	5	6	7	8	9	Total mean period of stay
Spont abortion	0.9	0.7	0.5	0.3	0.0	0.0	0.0	0.0	2.0	0.8
Induced abortion	1.5	0.8	3.5	0.6	8.0	-	-	-	-	1.5

Other aspects of care regarding induced abortion

In the current sub-section, we seek to explore other care related issues of induced abortion like, whether consent was taken for carrying out the abortion, if follow up visit was recommended, whether contraceptive advice was given, and, if so, the type of contraceptive advice given. Such aspects of care are cross tabulated against different demographic variables to understand commonalities and differentials emerging therein. A finding that finds support repeatedly is that service seekers from the low SLI are most likely to be

treated with lesser considerations for their consent and less likely to receive advice on follow up and contraceptives.

Consent (from the husband) was taken in an overwhelmingly large percentage of the cases (87.0%), though the data suggests that consent is taken less in cases where the service seeker belongs to low SLI. Both public as well as the private provider seek consent in most cases before undertaking the abortion. As regards whether an abortion provider asked for follow up visits to be made after an abortion, about 50 per cent of the cases were asked to come for follow up visits, while another 48.5 per cent were not given such advice. A small minority (in fact, a single case) was asked to come for follow up if there was a need (i.e. if some irregularities arose). Though, on the whole, advice for follow up was given in about half the cases, further disaggregation of the data suggests that service seekers from the low SLI were not given such advice in a majority of the cases. The data also suggest that public providers are less likely to advise follow up visit than their private counterparts. The amorphous category of 'other providers' is least likely to offer such advice. Table 6.12 gives details about consent and advice for follow up.

Table 6.12 Percentage distribution of induced abortions by aspects of care, 1996-2000

Consent from husband for carrying out abortion		**Yes**	**No**	**Other instances***
Standard of living	Low	55.6	33.3	11.1
	Medium	92.5	5.7	1.9
	High	87.8	8.1	4.1
Type of provider	Public	88.9	11.1	0.0
	Private	88.5	7.1	4.4
	Other providers	50.0	50.0	0.0
Total		87.0	9.0	3.9
Follow up visit advised		**Yes**	**No**	**Come only when needed**
SLI	Low	44.4	55.6	0.0
	Medium	54.7	45.3	0.0
	High	48.0	50.7	1.3
Type of provider	Public	44.4	55.6	0.0
	Private	52.6	47.4	0.0
	Other providers	25.0	50.0	25.0
Total		50.6	48.5	0.8

** Other instances include: consent taken from other members; consent sought but husband not present*
The above figures are row percentages

The offering of contraceptive advice forms an important element of care. Since contraceptive counseling is poor in both the public and the private sector, an abortion provider forms a crucial institutional link to such services. The present data however, is not very encouraging with respect to contraceptive advice being offered by abortion providers. About half the women were not offered contraceptive advice following abortion. The percentage of women receiving contraceptive advice shows consistency with SLI. The higher the woman is placed in the SLI, more likely is she to receive contraceptive advice after abortion. The percentage of women of the low SLI receiving contraceptive advice is least in comparison to those in the medium and high SLI and it is highest for those belonging to the high SLI. Public providers are less likely to offer contraceptive advice in comparison to private providers. Among the three categories of providers, the category of 'other providers' was least likely to offer such advice. If we cross tabulate the data against the parity of the abortion seeker, it is very discouraging to find that contraceptive advice was not offered to

women of varying parities in a large percentage of the cases. In fact, the data suggests that offering of contraceptive advice peaks for women with two children and then declines gradually. Table 6.13 has the details.

Table 6.13 Percentage distribution of induced abortions by offering of contraceptive advice, 1996-2000

Contraceptive advice offered after abortion		Yes	No
Standard of living	Low	33.3	66.7
	Medium	49.1	50.9
	High	52.7	47.3
Type of provider	Public	38.9	61.1
	Private	52.6	47.4
	Other providers	25.0	75.0
Parity of the abortion seeker	1	14.3	85.7
	2	60.0	40.0
	3	54.5	45.5
	4	50.0	50.0
	5+	39.1	60.9
Total		50.0	50.0
The above figures are row percentages			

6.4 SEX IDENTIFICATION TESTS

In view of the increasing resort to the abominable practice of sex identification test to abort a foetus in the event of its unwanted sex, a section in the interview schedule sought to ask related questions to an abortion seeker like the type of sex identification test conducted and whether the consequent abortion was performed at the same health care facility where the tests were conducted. Such a line of enquiry was expected to yield answers about access to different types of sex selection tests across Maharashtra as well as the possible collusion of health care providers in the act of aborting foetuses of unwanted sex (most possibly, the female foetuses) wherever sex identification tests are followed by abortions. Such collusion of the health care providers becomes more apparent in cases where the abortions are performed at the same health care facilities as where the sex identification tests were carried out.

An indication of the proliferation of the health care facilities offering sex identification tests (and consequent abortion) can be gauged from the fact that in both rural and urban areas, for an overwhelming majority of the cases, the time taken to reach such health care facilities is within two hours. In Mumbai, the better provisioning of facilities as also the widespread nature in which sex determination tests are carried out is underscored by the fact that all the six cases reported from the city accessed facilities for sex identification tests within two hours. Table 6.14 has the details.

Table 6.14 Percentage distribution of time taken to reach HCF carrying out sex identification tests, 1996-2001

Time in hours	Rural	Urban	Mumbai	Rest urban
Less than 1 hour	35.8	63.2	75.0	60.0
1 hour	40.3	26.3	25.0	26.7
2 hours	16.4	5.3	0.0	6.7
3+ hours	7.5	5.3	0.0	6.7
No. of abortions	69	19	4	15
The above figures represent column percentages				

Table 6.15 gives details about the sex identification tests in rural and urban areas. It shows that sonography was by far the most commonly carried out method for determining the sex of the foetus in both rural as well as urban settings, accounting for 97.0 per cent of the cases in rural areas and 89.5 per cent of the cases in urban areas. Amniocentesis accounted for the remaining cases. In Mumbai, sonography was carried out in all the four cases in which sex determination tests were carried out. With regards to the type of facility accessed for sex determination tests, the private sector was accessed for carrying out such tests in rural as well as urban areas of the state. Within the private sector, the private health care facilities were predominantly accessed in both rural and urban areas and in Mumbai, such facilities were the only type of facilities accessed for sex identification tests. Private sonography clinics were the other type of facilities used for carrying out such tests in rural and urban areas excluding in the city of Mumbai. It may be a reason for some consolation that the public sector is not reported to be involved in sex identification tests.

Table 6.15 Percentage distribution of sex identification tests, 1996-2001

Type of test	Rural	Urban	Mumbai	Rest urban
Sonography	97.0	89.5	100.0	86.7
Amniocentesis	1.5	10.5	0.0	13.3
Missing	1.5	0.0	0.0	0.0
Type of facility				
Public HCF	0.0	0.0	0.0	0.0
Private HCF	76.1	94.8	100.0	93.4
Private sonography clinic	22.4	5.3	0.0	6.7
Missing	1.5	0.0	0.0	0.0
Abortion performed in the same facility where sex determination tests were done				
Yes	10.9	12.2	25.0	6.7
No	10.0	8.9	0.0	13.3
Did not opt for abortion	77.5	78.9	75.0	80.0
Missing	1.5	0.0	0.0	0.0
Total tests	69	19	4	15
The above figures represent column percentages				

A further line of inquiry was to understand whether abortion was performed in the same health care facility as where the sex identification tests were carried out. The data show that, in both rural and urban areas of the state, a very high proportion of the women who went for sex identification tests did not opt for abortion. A little more than half of the women who opted for abortions following a test got it done at the same health care facility as the one where the tests were conducted. This is true in rural as well as well as urban areas (excepting in Mumbai, where in the case where abortion was resorted to, it was carried out in the same

health care facility where the test was conducted). The data thus show that facilities for sex selective abortion are widely prevalent in rural and urban areas of the state.

6.5 FAMILY SUPPORT AFTER ABORTION

Amount of rest received

An abortion episode/ event many a times weaken a woman both physically and mentally. Therefore amount of rest a woman gets after an abortion procedure assumes importance. Hardly any studies have talked about care that a woman gets at home after she returns from health care facility or otherwise after an abortion procedure, spontaneous or induced. For the first time a large-scale community based study has collected data on different aspects of domestic care that a woman receives after abortion.

Table 6.16 Per cent distribution of abortions by amount of rest received after an abortion by selected characteristic, 1996-2000

Demographic variable	Spontaneous abortion						Induced abortion					
	No rest	1 – 3 days	4 – 7 days	8 + days	Total	Mean	No rest	1 – 3 days	4 – 7 days	8 + days	Total	Mean
Place of residence												
Rural	35.7	1.0	5.1	58.2	100(102)	24.1	34.7	0.0	4.2	61.1	100 (74)	31.1
Urban	48.3	0.0	0.0	51.7	100 (58)	18.8	35.7	2.9	4.3	57.1	100 (67)	18.6
Mumbai	57.1	0.0	0.0	42.9	100 (23)	23.9	28.0	8.0	4.0	60.0	100 (26)	15.8
Rest urban	43.6	0.0	0.0	56.4	100 (35)	15.4	40.0	0.0	4.4	55.6	100 (41)	20.7
Standard of living												
Low	56.5	0.0	0.0	43.5	100 (25)	35.9	66.7	0.0	0.0	33.3	100 (9)	55.1
Medium	39.3	1.2	6.0	53.6	100 (84)	21.7	38.6	0.0	3.5	57.9	100 (57)	21.9
High	36.5	0.0	0.0	63.5	100 (51)	19.4	28.9	2.6	5.3	63.2	100 (75)	25.3
Pregnancy order												
1	33.9	0.0	3.6	61.5	100 (57)	24.3	28.6	0.0	0.0	71.4	100 (7)	19.4
2	37.8	2.2	4.4	55.6	100 (46)	25.1	32.4	0.0	2.7	64.9	100 (37)	33.6
3-4	48.9	0.0	2.1	48.9	100 (47)	18.2	35.6	2.7	4.1	57.5	100 (72)	21.7
5+	50.5	0.0	0.0	50.5	100 (10)	12.8	40.0	0.0	8.0	52.0	100 (25)	22.6
Social groups												
Upper caste	40.0	0.0	0.0	60.0	100 (5)	13.9	21.1	0.0	5.3	73.7	100 (19)	16.6
DPP	41.0	0.0	2.1	56.3	100 (48)	29.7	38.9	0.0	2.8	58.3	100 (36)	48.9
OBC	39.0	0.0	2.4	58.5	100 (43)	21.0	40.9	0.0	4.5	54.5	100 (44)	21.0
SC	42.9	7.1	0.0	50.0	100 (14)	22.4	33.3	0.0	0.0	66.7	100 (6)	19.1
ST	41.2	0.0	11.8	47.1	100 (17)	27.1	66.7	0.0	0.0	33.3	100 (6)	9.1
Caste unclassified	33.3	0.0	0.0	66.6	100 (9)	28.8	50.0	0.0	0.0	50.0	100 (4)	51.0
Non-Hindus	41.7	0.0	4.2	54.2	100 (24)	21.1	23.1	7.7	7.7	61.5	100 (26)	13.2
Total	40.5	0.6	3.2	55.7	100	22.3	35.2	1.4	4.2	59.2	100	24.9
	(66)	(1)	(5)	(88)	(160)		(50)	(2)	(6)	(83)	(141)	

The above figures indicates row percentages
The figures in parenthesis indicates number of abortions

Table 6.16 reveals that overall more than 35 per cent of woman for induced abortion and 40 per cent for spontaneous abortion had not got any rest after the procedure. What is also very significant is the fact that when a woman got any rest, more than half of the woman who had any type of abortion got rest for more than a week. On an average, for spontaneous abortion, a woman got 22.3 days of rest and for induced abortion it is close to 24.9 days.

When the data is disaggregated by place of residence one do not see much rural-urban difference in terms of rest received in case of induced abortion, whereas in case of spontaneous abortion there is a little difference. When the urban areas of the sample is further disaggregated, one can see that in case of induced abortion, 40 per cent of women from outside Mumbai did not get any rest as against only 28 per cent women from Mumbai. Where as in case of spontaneous abortion, more percentage (57.1%) of women did not get rest in Mumbai than women outside Mumbai (43.6%).

When the data are analysed by standard of living one can see a clear relation on the amount of rest a woman get after abortion. In both types of abortion, women who are from the lower SLI received much less rest than women from middle and higher category. Difference in rest received between the lower and the higher category is slightly more in case of induced abortion than in the case of spontaneous abortion. There is not much difference in terms of rest received by women from middle and higher SLI.

An analysis of data by pregnancy order do not show any marked difference in terms of rest not received at all over different parity, but in both types of abortion one can see that in the category of rest received for more than a week, there is a decreasing trend as the pregnancy order increases, i.e., more rest is received during a pregnancy loss in the first parity. These data thus confirm the well-proved assumption of our society that a woman is cared for until she gives the family the desired number of children.

Findings of the study show that women from the upper caste received more rest than woman from other caste. Data also reveal that woman from scheduled tribe who had an abortion, received less rest as compared to others and it is much pronounced in case of induced abortion, though these data need to be interpreted with caution as the number of induced abortions is very small in case of women from scheduled tribe.

Sharing of workload post abortion

As evident from the above table more than 64 per cent of induced abortion and 59 per cent of spontaneous abortion received some amount of rest. Table 6.17 gives us an idea who in the family had supported the woman in terms of sharing the workload after an abortion procedure.

Table 6.17 Per cent distribution of abortions which received care by members of the family who shared the workload after abortion by selected characteristic, 1996-2000

Demographic variable	Spontaneous abortion						Induced abortion					
	Women from in laws	Women from natal home	Men from in-laws	Friends	Others	No of abns[1]	Women from in laws	Women from natal home	Men from in-laws	Friends	Others	No of abns
Place of residence												
Rural	71.1	62.2	18.0	0.0	9.0	64	66.7	52.1	10.4	2.1	4.2	47
Urban	59.5	56.1	20.3	13.9	0.0	31	58.1	47.4	22.2	2.5	16.6	45
Mumbai	50.0	37.3	25.0	0.0	25.0	9	50.0	25.0	50.0	6.3	25.0	18
Rest urban	63.3	63.3	18.3	0.0	9.4	22	63.4	62.2	3.8	0.0	11.0	27
Standard of living												
Low	49.8	67.0	16.7	0.0	49.2	12	33.5	66.5	33.0	0.0	0.0	3
Medium	67.7	57.0	23.4	4.5	0.0	51	59.8	54.2	15.0	2.8	0.0	35
High	73.0	62.8	12.3	6.3	0.0	33	65.7	46.1	16.1	2.1	17.4	54
Pregnancy order												
1	65.8	57.5	23.3	3.0	7.6	38	80.5	60.5	0.0	0.0	0.0	5
2	61.5	58.8	10.8	0.0	10.1	29	59.8	43.3	25.3	8.4	12.5	25
3-4	69.9	66.3	17.0	13.6	0.0	24	60.7	53.1	16.0	0.0	11.3	47
5+	100.0	60.8	38.2	0.0	0.0	5	66.7	46.7	6.7	0.0	6.6	15
Social groups												
Upper caste	70.0	30.0	0.0	0.0	0.0	3	79.8	32.1	0.0	0.0	7.3	16
DPP	71.1	71.9	14.0	0.0	0.0	28	59.9	58.4	19.1	4.4	9.0	22
OBC	66.0	36.4	30.5	11.9	21.5	27	56.9	49.7	20.6	0.0	7.6	26
SC	60.4	88.2	34.9	13.9	0.0	8	49.7	50.3	0.0	0.0	0.0	4
ST	69.6	60.5	0.0	0.0	0.0	10	0.0	100.0	0.0	0.0	0.0	2
Caste unclassified	50.0	67.7	16.6	0.0	0.0	6	50.0	50.0	0.0	0.0	50.0	2
Non-Hindus	71.3	71.3	14.5	0.0	0.0	14	68.3	48.6	26.1	5.5	16.6	20
Total	67.3 (64)	60.2 (58)	18.7 (12)	4.6 (4)	6.1 (6)	96	62.4 (57)	49.8 (46)	16.2 (15)	2.3 (2)	10.3 (9)	92

[1] *The number of abortions means abortions which received rest post abortion*
The above figures Indicates row percentages and being multiple answers the percentages would not add up to 100.
The figures in parenthesis indicates number of abortions which received rests

The study finding reveals that in both spontaneous and induced abortion, women from the in-laws family extended support to more than 60 per cent of cases of abortion. As far as support of women from natal family is concerned, it is 50 per cent in case of induced abortion and 60 per cent in case of spontaneous abortion. Participation of men, as expected, is very low. While it is 16 per cent in case of induced abortion, it is 19 per cent in case of spontaneous abortion. Friends and other are the other two categories of people who had offered help in few cases of abortions. One does not see much of a difference in terms of support extended by different family members in both the types of abortion, in any setting whether rural urban or Mumbai or the rest urban of the state.

There is a notable difference between lower and higher SLI category in terms of help extended by women from in-laws family. In the case of spontaneous abortion (number of abortions in case of induced abortion is very small so one can ignore that). The proportion of women getting family support is 73 per cent and

50 per cent in higher and lower SLI category respectively. Whereas in terms of support extended by women from natal family there is not much difference between lower and higher category.

There is not much of an association noticed between the types of family members who extended their support post abortion with pregnancy order.

In the case of induced abortion one can see clearly that abortions that took place in upper caste households, support from women from in-laws family is much more than women from natal family than in households of other caste. In fact, for the other caste like dominant peasant and other backward castes support extended by women from in laws and natal family is more or less the same. In the case of spontaneous abortions there is not much of a difference regarding the above aspect.

Reason for not getting rest

As mentioned earlier in Table 6.16, there were 50 cases of induced abortion and 66 cases of spontaneous abortion that did not receive any rest after the abortion procedure. We tried to find out why. Table 6.18 gives the details.

Table 6.18 Percentage distribution of abortions by cause of not getting rest after abortion by selected characteristic, 1996-2000

Demographic variable	Spontaneous abortion					Induced abortion		
	Help not available	Help available but didn't feel the need	Help available but was forced to work	Missing	Total	Help not available	Help available but did not feel the need	Total
Place of residence								
Rural	76.3	18.4	0.0	5.3	100 (38)	87.5	12.5	100 (27)
Urban	55.2	37.9	6.9	0.0	100 (28)	70.8	29.2	100 (23)
Mumbai	38.5	46.2	15.4	0.0	100 (11)	71.4	28.6	100 (6)
Rest urban	70.6	29.4	0.0	0.0	100 (17)	70.6	29.4	100 (17)
Standard of living								
Low	73.3	13.3	0.0	13.3	100 (15)	66.7	33.3	100 (6)
Medium	73.5	26.5	0.0	0.0	100 (34)	95.2	4.8	100 (23)
High	55.6	33.3	11.1	0.0	100 (17)	66.7	33.3	100 (21)
Total	68.7 (46)	25.4(17)	3.0 (2)	2.7 (1)	100 (66)	79.2 (39)	20.8 (11)	100 (50)

The above figures indicates row percentages
The figures in parenthesis indicates number of abortions

Overall, in cases where woman have not been able to take any rest after an abortion it is mostly due to unavailability of help (in 79% and 69% of cases of induced and spontaneous abortions respectively). What is more striking is that there are 2 cases of spontaneous abortions where women were forced to work after having miscarriage though help was available. This may be due to the fact that in many families, members are not very sympathetic to spontaneous abortion. This type of situation did not arise in case of induced abortion may be because decision to induce a pregnancy is most of the times a family decision. More in-depth studies are necessary to establish this fact.

Rural women are much more deprived than woman from urban areas in terms of care available to them. In case of induced abortion, in 87 per cent of cases of abortions of women from rural areas help was not available as against 71 per cent for abortions from urban areas. Further disaggregation of data from urban areas does not show any difference between Mumbai and the rest of urban areas.

There is a considerable difference in case of spontaneous abortions where 76 per cent of abortions of women from rural areas help were not available as against 55 per cent for abortions from urban areas. Unlike induced abortion, there was a marked difference between Mumbai and rest of urban areas, with abortions taking place in rest of urban areas are twice more likely not to get help for managing spontaneous abortion than of abortions from Mumbai. This means that women from Mumbai have to deal with emergency (spontaneous abortions are emergencies unlike induced abortions) situations on their own.

There is not much of a difference between unavailability of help between lower and high category of people in the case of induced abortion, but in case of medium category help was not available to more than 95 per cent of abortions that took place in this category. In terms of spontaneous abortion there is not much difference between the low and middle category, but the situation about availability of help is little better for the higher category of women.

The data was also analysed for seeing the relationship between the reason for not being able to take rest and number of pregnancies a woman had or caste of the woman, but no clear relationship could be seen.

6.6 ROLE OF FAMILY IN DECISION MAKING

Role of family regarding decision making of induced abortion

A wealth of evidence indicates that Indian women have limited power and control on decision-making including reproductive issues.[1] [2] Family members play an important role in deciding the fate of a woman's pregnancy depending on the needs of the household, which in turn are governed by social norms. Also participation of husbands and other family members is crucial to have access to abortion services, as they are likely to have the knowledge, financial resources, and mobility to ensure that an adequate provider is sought. Therefore, in this study we tried to find out family members who participated in the decision of aborting the pregnancy. Table 6.19 gives the details.

[1] Gupte, M., Bandewar, S., and Pisal, H. (1996): Women's role in decision making in abortion: Profiles from rural Maharashtra, Paper presented at XIV International Conference of the Social Science and Medicine, Peebles, Scotland, September.

[2] Jejeebhoy, S. J. (2000): Women's autonomy in rural India: Its dimensions, determinants, and the influence of context, in *Women's Empowerment and Demographic Processes: Moving beyond Cairo*, Eds H. Presser and G. Sen, New York, Oxford University Press.

Table 6.19 Per cent distribution of abortions by members who participated in the decision of undergoing induced abortion by selected characteristic, 1996-2000

Demographic variable	Members					Number of induced abortion
	Self	Husband	Relatives from in-laws family	Relatives from natal family	Others	
Place of residence						
Rural	94.6	94.6	47.3	22.9	0.0	74
Urban	95.7	96.7	48.7	34.8	1.4	67
Mumbai	100.0	90.9	40.9	27.3	0.0	26
Rest urban	93.2	100	53.2	39.1	2.3	41
Standard of living						
Low	100.0	88.7	33.5	22.0	0.0	9
Medium	96.5	96.5	45.1	28.7	0.0	57
High	93.6	95.8	51.7	29.5	1.3	75
Pregnancy order						
1	86.0	86.0	86.0	43.8	0.0	7
2	94.7	89.2	45.9	32.3	0.0	37
3-4	95.9	97.1	45.2	29.5	1.4	72
5+	95.9	100.0	49.0	16.2	0.0	25
Total	95.1 (132)	95.7 (133)	48.2 (67)	28.8(40)	0.7 (1)	141

The above figures are row percentages and being multiple answers the percentages would not add up to 100.
The figures in parenthesis denote number of abortions

Table 6.19 shows that in a majority proportion of the abortions, the decision of aborting the pregnancy was taken by both the woman and husband, though in two cases out of 141 cases women did not tell anyone about aborting their pregnancy. In 48 per cent of abortions relatives from in-laws took part in the decision making process. The role of relatives from the natal family was much less, with a participation rate of only 29 per cent. Participation of other members outside the family is very negligible. Our data thus confirm with the findings of other studies on the importance of the role of other family members besides the woman herself in determining whether or not she can have an abortion.[3]

The very fact that 5 per cent of abortions were done where the woman herself has not participated, show that many woman do not enjoy their right over their own body and sexuality. What is significant is that woman with a higher standard of living seem to have less control over their own sexuality rather that the woman with a lower standard of living. Participation of husband and also of other family members of women in the decision making process from the lower standard of living category is less as compared to the other two higher categories.

In rural areas 95 per cent husbands participated in decision making process as compared to 97 per cent in case of urban areas. When the data of urban areas is further analysed, we see that in Mumbai, 91 per cent of husbands participated in the process of decision making against 100 per cent for the rest of urban areas. Generally relatives from both in-laws and natal family played a much less role in the decision making process of abortion by type of residence, but comparatively relatives from the natal family has a much less say in the decision making process in the rural areas as compared to urban areas.

[3] Johnston, H.B. (2002): *Abortion Practice in India: A review of literature*, Working paper, AAP-I, CEHAT and Health Watch, Mumbai.

Participation of the husband in the decision making process increases, whereas participation of other members of the family decreases, as one goes up the pregnancy order. This shows that aborting the first pregnancy is more a family decision whereas as the number of children increases the decision of abortion is primarily taken by the couple.

Role of family regarding decision of sex identification test

Participation of the family assumes more importantance in cases where the sex of the pregnancy were to be identified. This data is presented in Table 6.20. In some of the analytical variables the number is small and therefore those findings cannot be generalised, but they definitely show some trend which needs to be explored further.

Table 6.20 Per cent distribution of sex identification tests by members who participated in the decision of undergoing the sex identification test by selected characteristic, 1996-2001

Demographic variable	Members who participated in the decision making of sex selection test				No. of sex identification tests
	Self	*Husband*	*Parent-in laws*	*Parents*	
Place of residence					
Rural	95.7	88.4	50.7	27.5	69
Urban	94.7	89.4	41.5	41.6	19
Mumbai	100.0	100.0	25.0	25.0	4
Rest urban	93.1	86.1	46.5	46.7	15
Standard of living					
Low	100.0	100.0	60.3	40.1	5
Medium	91.6	80.5	33.2	33.2	36
High	97.9	93.6	59.3	27.7	47
Pregnancy order					
1	48.6	48.6	100.0	48.6	2
2	100.0	88.4	29.6	23.7	17
3-4	97.9	93.4	51.9	26.2	46
5+	91.3	82.7	51.6	43.1	23
Social groups					
Upper caste	100.0	42.3	28.1	71.4	7
DPP	93.2	91.0	47.8	20.4	44
OBC	100.0	95.4	41.8	33.4	21
SC	100.0	100.0	24.7	0.0	4
ST	100.0	100.0	100.0	75.2	4
Caste unclassified	100.0	100.0	100.0	0.0	1
Non-Hindus	85.0	85.0	71.8	42.7	7
Total	95.4(84)	88.6(78)	48.7(43)	30.7(27)	88

The above figures are row percentages and being multiple answers would not add up to 100.
The figures in parenthesis denote number of sex identification tests.

Table 6.20 shows that in a majority proportion of the tests, the decision of determining the sex of the foetus was taken by both the woman and husband. In 49 per cent of tests relatives from in-laws took part in the decision making process. Role of relatives from the natal family was much less, with a participation rate of only 31 per cent. Around 5 per cent of tests, the woman did not consent for determining the sex of the foetus.

There is hardly any difference in husband's participation between rural and urban areas. When the data of urban areas is further analysed, we see that in Mumbai, 100 per cent of husbands participated in the process of decision making against 86 per cent for the rest of urban areas. Generally relatives from both in-laws and natal family played a much less role in the decision making process of having a sex identification tests by type of residence, but comparatively relatives from natal family has a much less say in the decision making process in the rural areas as compared to urban areas. No difference was noticed in the participation by both in-laws and natal family by type of urban areas i.e., Mumbai and rest of urban areas of the state.

No clear trend is seen as far as the standard of living and participations of various family members regarding identification of the sex of the foetus are concerned.

As far as sex determination by pregnancy order is concerned, if we ignore the first order, as there are only two cases of sex identification tests, one can see a trend where the role of family members from the in-laws increases after the second pregnancy. Role of family members from the natal family increases after the 4th pregnancy.

6.7 CONCLUSION

The chapter highlights important issues with regards to spontaneous and induced abortions. A fairly high percentage of spontaneous abortions are untreated. In both rural and urban areas of Maharashtra, facilities offering spontaneous abortion related services are located nearer than those offering induced abortion related services. The private sector is the dominant player in the provision of abortion services in the state, though the poor tends to use public facilities in greater percentages than the medium or high income groups. For spontaneous abortions, the type of treatment received tends to be consultative as the serial number of providers goes up. However, in the case of induced abortions, higher order providers may also provide surgical care. The study highlights how the purchasing power of the service seeker may influence the line of treatment advised as well as influence providers' disposition towards service seekers. Sex identification tests are carried out by the private sector and can be accessed fairly easily. Facilities offering sex selective abortions are widely available in Maharashtra.

The study shows that support of the family to women depend upon lot of factors, the place of residence, standard of living and caste of the household. Overall women from lower socio-economic class received lesser amount of rest than by women from higher socio-economic class. The findings thus brings in forth that there is need for emphasis for taking rest by women after an abortion procedure. Health care providers can play an important role in making people aware about the care a woman need after abortion.

As far as role of family members in the decision making in abortion and sex identification tests are concerned, the study shows that though in majority of the cases, the decision were taken by both the woman and husband, the participation of members from the in-laws family in decision making is also noteworthy in many cases. Thus there is an urgent need for taking up advocacy and campaign to empower women to have control over their own sexuality.

CHAPTER 7

COST OF ABORTION SERVICES

7.1 INTRODUCTION

With a large private sector health economy where out-of-pocket expenses is the norm the cost to an individual is bound to be a major factor. In the present study expenditures for each pregnancy loss related event was recorded. While we have recorded data for lifetime events we feel that cost related information beyond a few years would be suspect of severe recall lapses. Hence we will look at expenditure on abortions only from 1996 to 2001, assuming that recall of major expenditures in last 5 should be reasonably accurate.

7.2 OVERALL COSTS

As we have seen in an earlier chapter, during the reference period (1996-2000) we have recorded 141 induced abortions and 160 spontaneous abortions[1] in our sample across Maharashtra state. The average out-of-pocket cost per abortion in our sample was Rs. 1415.4, being Rs. 1746.5 for induced abortions and Rs. 1113.7 for spontaneous abortions. The median cost was Rs.1220 and Rs. 494.4, respectively. We have also recorded expenditures incurred on stillbirths. For the 26 stillbirths during the reference period the mean expenditure was as high as Rs. 2533.06, though the median expenditure was only Rs. 503.98 per stillbirth.

This is probably the first time in the country that abortion expenditures have been recorded in a large-scale study. Countrywide or even statewide studies, which have recorded healthcare expenditures, have not recorded abortion expenditures even though they may have recorded abortion events. However, smaller studies on health expenditures have done so. So, how does this compare with the data from these smaller studies? Such studies done during this period in various states have recorded mean expenditures ranging from Rs.300 to Rs.1500.[2] The present study being specifically on abortion, unlike the other studies, has recorded greater details and hence various dimensions of cost and expenditure can be analysed.

---

[1] There were 4 missing cases of spontaneous abortion, only for cost data, which are excluded from analysis.

[2] Duggal, R. (2003): Abortion Economics – Cost and Expenditures in India, *Seminar,* Dec 2003; and Sundar, R. (2003): *Abortion Costs and Expenditure – A Review*, CEHAT and Healthwatch, Mumbai.

Table 7.1 Average cost in rupees of spontaneous and induced abortions (Rs. per abortion), 1996-2002

Period	Spontaneous abortion			Induced abortion		
	Mean	Median	Abortions	Mean	Median	Abortions
1996-2000	**1113.7**	**494.4**	**156**	**1746.5**	**1220.0**	**141**
1996	799.9	535.7	27	2305.4	1082.4	25
1997	887.9	586.6	23	1398.8	915.7	21
1998	514.0	107.3	28	1586.5	1350.0	37
1999	1596.7	875.4	42	1848.0	1394.2	32
2000	1399.8	624.4	36	1580.6	1130.2	26
2001 *	1227.0	1027.0	39	2045.0	1450.5	52
2002 **	1280.6	302.1	3	4698.0	1142.5	4

** Data for 8 – 12 months, annual data for 117 PSUs;*
*** Data for 0 – 3 months, only for 40 PSUs*

Table 7.1 lists mean and median expenditures incurred by households for the reference period and each year of the reference period for both induced and spontaneous abortions. The mean costs during the reference period range between Rs. 1399 and Rs. 2305 for induced abortions and between Rs. 514 and Rs. 1597 for spontaneous abortions. The median expenditures range between Rs. 916 and Rs. 1394 for induced abortions and Rs. 107 to Rs. 875 for spontaneous abortions. The variations we see across years do not show any specific trend, though in median expenditures one does see a clearer trend of increasing costs over time for both induced and spontaneous abortions.

In Table 7.2 we have generated distribution of expenditure on abortion by ranges of expenditure to enable us to see which are the major ranges in which expenditure occurs. We see that more than one-third of induced abortion cases cost less than Rs. 1000 and the largest category for induced abortions is Rs.1001-1500 accounting for 26 per cent of the cases. In the case of spontaneous abortions the largest category is the one that did not seek any intervention or treatment and thus more than half the cases fall in the less than Rs. 500 cost category. This is reflected in the median expenditure of Rs. 494.4 per spontaneous abortion.

Table 7.2 Per cent distribution of spontaneous and induced abortions by range of costs, 1996-2000

Cost category (Rupees)	Spontaneous abortion	Induced abortion
No expenditure	0.6	2.8
< Rs.500	21.9	16.9
Rs.501-1000	16.2	16.9
Rs.1001-1500	9.4	26.1
Rs.1501-2000	4.4	7.0
2001-3000	6.9	16.9
3001+	11.2	12.7
Treatment not taken	26.9	0.0
Missing cases	2.5	0.0
Total	100.0	100.0
No. of abortions	160	141

When we cross-tabulate cost data with type of facility used for induced abortions we find that 72 per cent of abortion cases in the public sector cost less than Rs. 500 whereas in the private sector 72 per cent of

abortions cost more than Rs. 1000 (Table 7.3) The other providers are traditional providers like dais or local abortionist, chemist, paramedics and other untrained persons. What is interesting is that these account for only 5 per cent of induced abortions and half of these cost less than Rs.1000 per abortion. While the public facilities are all allopathic providers, the private providers include the entire range of qualified, though not necessarily certified abortion providers – allopathic, ayurveda, homoeopathy etc., who together account for 82 per cent of induced abortions.

Table 7.3 Per cent induced abortion costs by type of provider, 1996-2000

Cost category (Rupees)	Type of provider			All cases
	Public	Private	Other	
No expenditure	11.1	0.0	25.0	2.8
< Rs.500	61.1	10.3	12.5	16.9
Rs.501-1000	11.1	18.1	12.5	16.9
Rs.1001-1500	5.6	31.0	0.0	26.1
Rs.1501-2000	0.0	8.6	0.0	7.0
2001-3000	0.0	19.0	25.0	16.9
3001+	11.1	12.1	25.0	12.7
No data / Can't say	0.0	0.9	0.0	0.7
Total	100.0	100.0	100.0	100.8
No. of abortions	18 (13.0)	115 (82.0)	8 (5.0)	141 (100.8)
The figures in parentheses are row percentages				
The above figures are column percentages				

The cost category Rs.1001-1500 wherein the median lies cuts across gestation periods (Table 7.4) upto 20 weeks as the largest cost category. Further, upto eight weeks of gestation 40 per cent of abortions cost less than Rs. 1000 and in the 8-12 week gestation period 36 per cent of abortions cost less than Rs. 1000. Late trimester abortions which account for 28 per cent of induced abortions cluster within the cost categories above Rs. 2000, with 50 per cent of abortions in 20-28 weeks category costing more than Rs. 2000 and 39 per cent in the 12-20 weeks category costing more than Rs. 2000. So there is a clear linkage of rising cost with increased gestation at which abortions take place.

Table 7.4 Per cent induced abortion costs by length of gestation, 1996-2000

Cost category (Rupees)	Length of gestation				All cases
	Upto 8 weeks	8-12 weeks	12-20 weeks	20-28 weeks	
No expenditure	1.6	2.4	6.5	0.0	2.8
< Rs.500	19.7	16.7	12.9	12.5	16.9
Rs.501-1000	18.0	16.7	16.1	12.5	16.9
Rs.1001-1500	27.9	28.6	22.6	12.5	26.1
Rs.1501-2000	8.2	7.1	3.2	12.5	7.0
2001-3000	11.5	26.2	16.1	12.5	16.9
3001+	11.5	2.4	22.6	37.5	12.7
No data/Can't say	1.6	0.0	0.0	0.0	0.7
Total	100.0	100.0	100.0	100.0	100.0
No. of abortions	61 (43.0)	42 (29.0)	30 (22.0)	8 (6.0)	141 (100.0)
The figures in parentheses are row percentages.					
The above figures are column percentages					

Apart from the type of provider and the gestation period when abortion takes place, the type of intervention also determines the cost. In table 7.5 we see that D&C which accounts for nearly two-thirds of all induced abortions has a clustering of two-thirds abortions in the Rs. 1000 and above category, whereas other interventions cluster around Rs.1000 or lower. It must be noted here that apart from D&C women were unable to identify other methods properly and reported injections and oral medications as interventions for abortion.

Table 7.5 Per cent induced abortion costs by type of intervention, 1996-2000

Cost category (Rupees)	Type of intervention				All cases
	D&C	Injections	Oral	Other	
No expenditure	1.1	—	13.6	—	2.8
< Rs.500	14.3	27.3	22.7	17.6	16.9
Rs.501-1000	18.7	9.1	18.2	11.8	16.9
Rs.1001-1500	27.5	18.2	18.2	35.3	26.1
Rs.1501-2000	11.0	—	—	—	7.0
2001-3000	15.4	18.2	13.6	23.5	16.9
3001+	11.0	27.3	13.6	11.8	12.7
No data / Can't say	1.1	—	—	—	0.7
Total	100.0	100.0	100.0	100.0	100.0
No. of abortions	91 (64.0)	11 (8.0)	22 (16.0)	17 (12.0)	141 (100.0)

The figures in parentheses are row percentages.
The above figures are column percentages
Note: multiple responses have been excluded

7.3 COMPONENTS OF COSTS

What was the breakdown of the components of this expenditure incurred on abortions? This information is not available for all cases. In the case of induced abortions for 65 per cent of cases and for spontaneous abortions for 64 per cent of cases we have components of expenditure reported. In rest of the cases the women reported only approximate total expenditures. Table 7.6 gives the distribution of the component expenditures.

Table 7.6 Per cent distribution of components of abortion expenditure and mean cost of component (Rs. per abortion), 1996-2000

Components of expenditure	Spontaneous abortion		Induced abortion	
	Mean	Per cent	Mean	Per cent
Hospital / Provider	324.4	57.1	1080.0	74.4
Medicines and Tests	165.2	29.0	284.9	19.3
Blood transfusion	1.3	0.2	0.0	0.0
Travel	57.5	10.1	55.2	3.8
Food and stay	19.5	3.4	31.8	2.2
Total	568.0	100.0	1451.7	100.0
No. of abortions	103		93	

As expected the largest component of abortion cost is that of the hospital and/or provider, which accounts for nearly three-fourths of the cost for an induced abortion and 57 per cent in the case of spontaneous abortion. The next major component is medicines and tests which in the case of induced abortions is 20 per cent and in case of spontaneous abortions much higher at 29 per cent. Thus 94 per cent of abortion expenditure is direct medical costs in case of induced abortions and 86 per cent in case of spontaneous abortions. Also higher travel costs as a proportion in case of spontaneous abortions are reflective of emergency situations that may have arisen due to a sudden event. The picture remains more or less the same when we calculate per component cost (Table 7.7) instead of per abortion cost, except for blood transfusion, which happened in only two cases of spontaneous abortions during the reference period.

Table 7.7 Mean cost of abortion expenditure per component (Rs. per component), 1996-2000

Components of expenditure	Spontaneous abortion	Induced abortion
	Mean	Mean
Hospital / Provider	324.4 (103)	1091.7 (92)
Medicines and Tests	165.2 (103)	297.7 (89)
Blood transfusion	69.5 (2)	0.0 (0)
Travel	57.5 (103)	55.6 (92)
Food and stay	19.5 (103)	32.5 (91)
Total	568.0	1477.7

The figures in parentheses are cases for that component of expenditure

We further disaggregated the component costs per abortion by type of provider and obtained very large variations as seen in the Table 7.8. Between public and private sector the overall cost variation was over eleven times, but for medical care costs like hospital/provider cost it was much higher in the private sector by as much as 20 times. Medicine costs too were higher in the private sector by over nine times. In the public sector the main cost was travel, that is access costs. For other providers the average costs were much lower than the private sector. Across rural and urban areas the medical care costs were more or less similar, though within urban areas the hospital cost in the Mumbai region was over three times as that of rest of urban Maharashtra. But two differentials between rural and urban areas are very clear; one is the travel cost, which is 2.8 times more for rural areas and the other is food and stay expenses for which the urban women did not have to spend at all. From the above analysis it becomes clear that for rural areas access costs, travel and food and stay, are additional costs which they have to bear whether they use public or private health services. But if women use public services the medical care costs, that is hospital/provider and medicines, is negligible. We must remember that the data pertains to a period when the substantive increase in user charges in the public sector had not been introduced (they were implemented only in mid 2000).

Table 7.8 Mean and median cost of abortion expenditure by type of provider (Rs per induced abortion), 1996-2000

Components of expenditure	Public		Private		Other	
	Mean	Median	Mean	Median	Mean	Median
Hospital / Provider	64.3	0.0	1307.5	1000.0	833.6	156.3
Medicines and Tests	40.8	0.0	360.8	200.0	193.5	48.4
Blood transfusion	-	—	—	—	—	—
Travel	38.3	29.2	61.4	30.0	26.7	4.4
Food and stay	2.5	0.0	41.1	0.0	0.0	0.0
Total	140.5	100.0	1676.0	1114.5	1053.8	223.1

7.4 DIFFERENTIALS OF ABORTION COSTS

Rural/Urban and regional

The rural urban differentials in out-of-pocket expenditures on abortion are marginal. Infact the median expenditure indicates that rural women are spending more than urban women in accessing induced abortion services. While this holds true overall, the picture changes when we disaggregate Mumbai from the urban sample. The average cost per abortion to Mumbai women is much higher at Rs. 2760 per abortion, nearly twice that of other urban areas - in case of spontaneous abortion the median expenditure in Mumbai is four times higher than that of other urban areas and 5.6 times that of rural areas. And of total induced abortion expenditure Mumbai accounts for over 28 per cent of expenditure even though only 18 per cent of the induced abortions and 13 per cent of spontaneous abortions were from Mumbai. As we have seen in an earlier chapter Mumbai also has very high induced and spontaneous abortion rates compared to other regions of the state. Desegregating Mumbai from rest of urban areas also increases the gap between rural expenditure (higher) and rest of urban expenditure (Table 7.9).

We have gone further and disaggregated expenditures across various regions of Maharashtra. This shows that the cost of abortion is directly related to economic development of the region – the more developed the region the higher is the cost per abortion which women have to bear. Thus Mumbai, Pune and Nashik regions have highest per abortion costs as compared to the other regions.

Table 7.9 Mean and median cost of abortions across socio-geographic regions, (Rs. per abortion), 1996-2000

Demographic variable	Spontaneous abortion			Induced abortion		
	Mean	Median	Abortion	Mean	Median	Abortion
Place of residence						
Rural	798.9	397.5	98	1698.5	1235.4	74
Urban	1650.4	877.7	58	1796.5	1208.2	67
Mumbai	2340.0	2257.9	23	2760.9	2012.0	26
Rest urban	1242.3	558.9	35	1256.8	1028.4	41
Regions						
R-1 excluding Mumbai	605.8		18	1495.6		14
R-2	1176.8	397.6	13	1875.5	1628.1	11
R-3	999.9	605.1	42	1634.3	1113.6	47
R-4	878.4	232.3	32	1584.7	1007.3	22
R-5	758.9	548.2	15	1352.4	1320.8	15
R-6	163.2	0.0	13	506.5	315.1	6
Total	1113.7	494.4	156	1746.5	1220.0	141

Social group

Desegregation across various social groups shows an interesting pattern of expenditure on abortions. (Table 7.10) The median expenditure is the highest for *adivasis* in case of induced abortions, though mean expenditures are higher for upper castes and dominant peasant proprietors. The *adivasis* live in remote areas and access to healthcare services is usually difficult for them and this perhaps increases the access costs whenever they need to access abortion services. For spontaneous abortions the *adivasis* are having lower expenditures perhaps because they would be using local services for such abortions. The scheduled caste, other backward castes and non-Hindus have incurred lower per abortion expenditures. The lower median costs for the deprived social groups is also indicative of their higher usage of public facilities or not taking treatment for spontaneous abortions. However, it is intriguing to note that neither the SCs nor the STs used public facilities for induced abortions, and this is reflected in their relatively higher average expenditures incurred for seeking induced abortions.

Table 7.10 Mean and median costs of abortions by social groups (Rs. per abortion), 1996-2000

Social Groups	Spontaneous abortion			Induced abortion		
	Mean	Median	Abortion	Mean	Median	Abortion
Upper caste	1697.4	584.0	5	2953.2	1515.5	19
DPP	984.9	603.0	48	2067.3	1306.5	36
OBC	1179.9	378.5	42	1257.9	1094.6	44
Scheduled caste	871.2	79.0	14	1273.3	1213.7	6
Scheduled tribe	1073.2	456.0	17	2016.9	1860.8	6
Caste unclassfied	675. 7	226.0	6	1035.3	711.0	4
Non-Hindus	1329.2	407.0	24	1380.3	1140.0	26
Total	1113.7	494.4	156	1746.5	1220.0	141

Type of provider

As we have seen earlier 82 per cent of abortions are provided by private healthcare facilities. As a consequence of this the out-of-pocket burden for abortion seekers is very high. The median cost of an abortion in a private health facility is Rs.1294 per induced abortion. (Table 7.11) This is 7.5 times more than what women have spent on seeking abortion services from the public facilities. In case of spontaneous abortions the gap is narrower at 2.3 times. Of the total expenditure on induced and spontaneous abortions the private sector accounted for a whopping 87 per cent. This shows that private abortion services are well entrenched and widely used all over Maharashtra, even though most of them may not be certified abortion providers. The non-qualified and traditional providers were also not cheap. In fact the median expenditure for induced abortion services from these providers was even higher than that of private facilities. In the case of spontaneous abortions for more than one-fourth of such abortions no intervention was sought and this is the main reason why the average cost for spontaneous abortions is much lower than induced abortions. The treatment not taken category is as high as 44 per cent amongst the low standard of living groups, 66 per cent amongst neo-Buddhists, 43 per cent amongst SCs and 35 per cent among STs.

Table 7.11 Mean and Median costs of abortions by type of provider (Rs. per abortion), 1996-2000

Type of abortion provider	Spontaneous abortion			Induced abortion		
	Mean	Median	Abortion	Mean	Median	Abortion
Public Facility	1002.4	427.4	22	1031.2	173.7	18
Private Facility	1661.5	976.9	91	1866.9	1293.6	115
Other Providers	—	—	43*	1625.6	1496.1	8
Total	1113.7	494.4	156	1746.5	1220.0	141
**Refers to intervention not sought*						

Standard of living and income

Given the fact that abortion services have to be mostly accessed from the market one would anticipate strong access barriers due to lack of purchasing power. The standard of living (SLI) desegregation shows that only 6 per cent of induced abortions were from the low SLI group when they constitute 26 per cent of the households. This shows lack of adequate access to this SLI group. In the case of spontaneous abortion cases, as expected the proportion of women from each group is closer to their proportion in the population since such abortions are to some extent biologically determined and less likely to show class differentials. The difference between the low and high groups is 2.8 times for induced abortions. In the case of spontaneous abortions the gap is over 5 times, even though as many as 16 per cent of spontaneous abortions were from the lowest SLI group. This gap is again due to poverty restricting access as we have seen that a very large proportion of spontaneous abortions did not seek any treatment and a very large proportion of these were from the low SLI group. The high SLI group, which constitutes 27 per cent of the households, accounts for as much as 53 per cent of induced abortions and 31 per cent of spontaneous abortion cases with each having incurred a median expenditure of Rs.1350 and Rs.968, respectively, per abortion. Here access is not a constraint so utilisation rate and expenditure for care and treatment is much higher (Table 7.12).

We also attempted to record approximate incomes of the households in the sample. As usually happens income is always underreported. Nevertheless assuming underreporting across the board, income data does provide some useful hints to understand abortion expenditures. The mean income per capita

per year is Rs.10741 for the entire sample but for households that reported induced abortions the mean income was much higher at Rs.14413 per capita per year. This shows that the choice and decision to abort is closely associated with purchasing power, and with the lower social groups having poor access to resources their option to seek abortion services gets limited and restricts their exercise of choice.

Table 7.12 Mean and median costs of abortions by standard of living categories (Rs. per abortion), 1996-2000

Standard of living	Spontaneous abortion			Induced abortion		
	Mean	Median	Abortion	Mean	Median	Abortion
Low	300.6	284.5	25	953.8	476.0	9
Medium	1088.3	523.8	83	1621.5	1130.4	57
High	1578.4	967.8	48	1933.3	1350.0	75
Total	1113.7	494.4	156	1746.5	1220.0	141

Woman's occupation

A majority of the women who sought abortion were non-working. There is a similar pattern of distribution of abortion expenditure as in case of SLI. Women who were economically in a better position were spending more to seek abortion services (Table 7.13). This is again indicative of the role of purchasing power in restricting access to abortion services in the context of a largely private market of abortion services. Women in professional/managerial positions were spending as much as Rs.6428 per abortion in contrast to clerical/ service workers who spent Rs.1052 per induced abortion. The daily wagers were also spending a substantial amount for abortion services. While overall expenditures for spontaneous abortion were lower the variation across occupation classes were similar to induced abortions, especially median expenditures. Here again we see the role of purchasing power very clearly with spontaneous abortions being more proportionately distributed across categories as compared to induced abortions for which the choice to access has to be decided on the basis of availability of resources.

It must be noted here that two-thirds of the non-working women who sought induced abortion came from the from the higher SLI, among upper castes such women constituted 80 per cent and came from households which averaged a household annual income of Rs.107,673. And of course the women in the professional occupation group were all from the highest SLI and belonged to the upper and dominant caste groups and came from household averaging an annual income of Rs.178,106. This provides further support to the purchasing power hypothesis, which emerges strongly in the present study.

Table 7.13 Mean and median costs of abortions by woman's occupation, (Rs. per abortion), 1996-2000

Woman's occupation	Spontaneous abortion			Induced abortion		
	Mean	Median	Abortion	Mean	Median	Abortion
Professional/Technical/ Managerial	524.1	563.3	3	6427.8	2028.4	5
Skilled Workers	408.1	169.3	7	1086.1	735.7	9
Clerical/service/trade	562.8	327.2	10	1052.2	598.3	9
Cultivator	616.5	282.3	35	2131.4	1115.7	20
Agri. labourers/ daily wagers	541.5	302.1	25	1951.2	1068.6	10
Not working	1690.8	964.3	76	1507.3	1259.1	88
Total	1113.7	494.4	156	1746.5	1220.0	141

Current age and age at abortion

In abortion practice it is well known that abortions at younger ages, especially under 18 years which is the legal age at marriage, and of older age groups where risks may be higher are charged at higher rates by private providers. The data from this study does show that this pattern of charging holds true with women of age groups at the two extremes of the reproductive cycle spending the highest amounts per abortion, especially for induced abortions (Table 7.14). Of course, the number of abortions among these two age cohorts is also very few compared to other age groups. For the 15 – 19 years age group it means two things. First, for early conceptions women avoid resorting to induced abortion and prefer to carry the pregnancy to full term. They may also delay the abortion because of the lower control of decision-making at this age and thus end up with later gestation abortions that cost more. Second, with age at marriage rising, the number of conceptions in that age group is bound to be less. Further, since we did not include never-married women in the sample such abortions, if any, would not get reflected here.

When we look at spontaneous abortions we find that the age group of 15-19 years accounts for 16% of abortions. At one level biological factors may be playing a role but at another it is also possible that younger women, especially those with first conceptions may be reporting induced abortions as spontaneous ones because of the stigma related to the former. Thus the average cost tends to be higher for this age group. At higher age groups, both for induced and spontaneous abortions the costs tend to be lower because at those ages abortion is more acceptable (after a woman has had children), as a family planning method. Thus stigma and secrecy are less and the market realises this and keeps the price lower.

Table 7.14 Mean and median costs of abortions by current age and age at abortion (Rs per abortion), 1996-2000

Age groups	Spontaneous abortion			Induced abortion		
	Mean	Median	Abortion	Mean	Median	Abortion
Current age						
15-19	1159.5	555.8	25	2061.7	1251. 5	3
20-24	958.0	398.1	55	1464.1	1103.1	36
25-29	1137.7	470.9	49	1552.7	1149.2	45
30-34	1524.2	620.8	23	1607.9	1334.4	37
35-39	214.4	0.0	3	1923.3	1420.3	14
40 and above	970.3	970.3	1	5057.6	1208.0	6
Age at abortion						
15-19	957.5	368.1	68	1673.9	1187.8	16
20-24	1173.2	582.5	56	1427.1	1138.0	54
25-29	1487.8	523.8	27	1664.7	1241.7	48
30 and above	587.7	632.7	5	2664.6	1208.4	23
Total	1113.7	494.4	156	1746.5	1220.0	141

We have also tabulated data on abortions by age at abortion that is for each woman abortions taking place when she was in the specific age group. Here we find that for induced abortions there is a clustering of abortions in the 20 – 29 years age group and for spontaneous abortion in the 15 – 24 years age group. For these age groups the costs tend to be lower (Table 7.14).

Length of gestation

Again age of gestation is an important determinant of cost. Here again the practice in the market is higher the gestation higher the cost. Data from our study (Table 7.15) does not belie this and a very clear pattern of charging across gestation length emerges, especially for induced abortions. For early trimester abortions the median cost is Rs.1051 for induced abortions upto eight weeks, rising to Rs.1235 for 8-12 weeks and going as high as Rs.2264 for over 20 weeks. In the case of spontaneous abortions the median expenditures follow a reverse pattern with cost declining with increase gestation. This contrary pattern can again be explained due to the high proportion of non-interventions as well as larger use of public facilities for spontaneous abortions at higher gestations, thus accounting for lower costs.

Table 7.15 Mean and median costs of abortions by length of gestation (Rs per abortion), 1996-2000

Length of gestation	Spontaneous abortion			Induced abortion		
	Mean	Median	Abortion	Mean	Median	Abortion
Upto 8 weeks	1224.5	598.8	31	1722.2	1050.6	61
8-12 weeks	849.3	450.7	60	1404.5	1235.3	42
12-20 weeks	1201.6	406.3	50	1949.9	1454.6	30
20-28 weeks	1654.0	304.1	15	2981.4	2263.9	8
Total	1113.7	494.4	156	1746.5	1220.0	141

Type of intervention and treatment

Similar to many other provider studies, this study also shows that dilatation and curettage is the most common method of abortion, and it is also used along with other methods like vacuum aspiration, late trimester surgical methods as well as with medical methods (Table 7.16). Even in very early gestation abortion practice shows the use of D&C amongst all kinds of abortion providers. There is some sort of obsession with curettage, and hence a practice like check curettage is fairly common even when manual vacuum aspiration is done as early as six weeks. This not only raises the cost of abortion but also expose women to risks like perforation and infections. In the present study D&C was done in 82 per cent of induced abortions despite 73 per cent abortions being first trimester abortions (of which 59% were upto 8 weeks). Infact across all gestation periods D&C is reported as the most commonly used method. With such large numbers D&C cost is similar to the mean and median of all induced abortions. It must be noted here that other interventions mentioned by women may not all necessarily be for inducing abortion but also for treatment of abortion related morbidity and for diagnostic tests.

Table 7.16 Mean and median costs of abortions by type of intervention (Rs. per abortion), 1996-2000

Type of intervention	Spontaneous abortion			Induced abortion		
	Mean	Median	Abortion	Mean	Median	Abortion
D&C	1922.6	1426.7	60	1787.5	1220.0	116
Injection	1224.7	522.9	70	1866.9	1531.0	49
Medicine and pills	1092.3	552.5	84	1521.3	889.7	68
Other	1563.3	915.0	78	1743.4	1215.2	47
No Treatment	0.0	0.0	43	0.0	0.0	0.0
Total	1113.7	494.4	156*	1746.5	1220.0	141*
**Total cases do not add up because of multiple responses*						

We also looked at the type of intervention across type of providers and as expected we saw that for the D&C procedures the median cost in public health facilities was Rs.91.4 per abortion and in private health facilities Rs.1257.3, a difference of more than 13 times, and cost of oral medication for abortion was over ten times in the private sector. What is clear from this is that wherever public services for abortion are available the cost borne by women out-of-pocket is minimal. When public services are not available women are forced to use private abortion providers at an exorbitant cost, or if they cannot afford it then they either carry the pregnancy to full term as in the case of the poorer women who may have wanted an induced abortion, or in the case of spontaneous abortions do not seek any medical intervention at all. Both these decisions made because of lack of choice harm their health.

Source of financing and loss of wages

Out of the total induced abortion expenditure during the reference period 83 per cent of the expenditure by women was self-financed, the remaining came from borrowings, either from relatives or moneylenders. In fact there was only one woman in the sample who borrowed Rs. 2550 for an induced abortion (Table 7.17). We have seen earlier that women who had sought abortion on an average were economically better placed than the average population and hence the need to borrow money on interest for abortion was not necessitated. The same is more or less true for spontaneous abortions with 71 per cent of expenditure incurred being self-financed – borrowings for relatives was higher in case of spontaneous abortions.

Table 7.17 also indicates that the mean and median expenditures are higher in cases where borrowings have taken place in contrast to when families have spent from their own resources.

Table 7.17 Mean and median costs of abortions by source of financing (Rs. per abortion), 1996-2000

Source of financing	Spontaneous abortion			Induced abortion		
	Mean	Median	Abortion	Mean	Median	Abortion
Self	1476.3	825.0	83	1708.2	1180.6	120
Natal family	1024.7	717.9	15	1741.2	1798.7	12
Borrowed from Relatives	2071.5	1128.4	17	3134.9	3290.7	8
Money lender	406.0	408.0	3	2550.0	2550.0	1
Other	4103.7	4985.2	3	2046.5	2064.1	4
No treatment / No expenses	—	—	43	—	—	3
Total	1113.7	494.4	156*	1746.5	1220.0	141*
**Total cases do not add up because of multiple responses*						

We had also asked questions on indirect costs, such as loss of working days and wages. The data from the study shows that in the sample in case of induced abortions 1037 person days of the women seeking abortion were lost or a mean of 7.35 days per induced abortion and this translated into Rs.164.6 of wage loss per induced abortion. In the case of spontaneous abortions the mean days lost was higher at 9.44 days per abortion and the wages lost were Rs. 174.1 per spontaneous abortion. If we consider this loss as a cost then the mean induced abortion cost goes up by 9 per cent and the spontaneous abortion cost by 16 per cent.

7.5 SEX-SELECTION TESTS AND SEX-SELECTIVE ABORTIONS

Out of the 141 induced abortions in 16 of the abortions or 11.34 per cent sex-determination was reported. The mean abortion cost, excluding the sex-test, was Rs. 1951.6 and median cost Rs.1445.5. However, sonography was done in as many as 34 per cent of the induced abortions. In the case of spontaneous abortions sonography was done only in 15.4 per cent of cases and a sex test was done only in one case prior to the spontaneous abortion. As regards expenditure on the sex-determination test itself, the mean expenditure per sex test during the reference period was Rs. 780.0 (Rs.950.1 for amniocentesis and Rs. 755.88 for sonography) and the median expenditure Rs. 552.9 per sex test (Rs.939.5 for amniocentesis and Rs 545.8 for sonography). Of the total 80 per cent were done by private healthcare providers and 19 per cent by sonologists. The difference in the sex test cost across the SLI as well as across rural-urban areas was marginal, though in Mumbai it cost twice as much (Rs.1470.9) than the average cost for the state as a whole.

7.6 CONCLUSIONS

We have seen earlier that the mean cost of abortions (induced plus spontaneous) is Rs.1415.36 per abortion. We have also seen in a preceding chapter that for every 100 live births there are 9.6 abortions in Maharashtra. For the same reference period if we calculate the number of live births (based on SRS data) we get 2.04 million live births per year in Maharashtra. Taking the ratio of 9.6 abortions per 100 live births from the study we find that in Maharashtra 220,485 abortions take place annually. If we multiply this with the average out-of-pocket expenditure of abortion from our study we get a figure of Rs.312.07 million as the household burden for accessing abortion services. Of this 90 per cent goes to the private sector.

In the analysis of the expenditure on abortion we also find that access to abortion services is closely linked with purchasing power of households. Hence the decision to seek abortion services, especially induced abortion, depends substantially on access to resources. Wherever public abortion services were available the out-of-pocket cost was marginal and that too largely for access costs like transport and purchase of prescription medicines. The purchasing power hypothesis gets further support when we look at abortion expenditures across the standard of living groups, income categories, social groups and occupation groups. It is clearly evident that the better off groups are able to access abortion services far more easily because of the nature of the abortion economy wherein dependence on private providers is extremely high. Thus the share of the better of groups in total abortions is substantially high. This is not surprising because even data from general health utilisation surveys show that economically and socially better off groups report higher morbidity and much higher hospitalisations as compared to the poor and underprivileged groups. This pattern emerges because of a largely private health economy that demands purchasing power to access services as a consequence of which those lacking purchasing power are constrained to exercise their choice of seeking care freely, the latter being reflected in high non-utilisation/treatment not taken rates. This can be remedied only with improved equity in access to health services and for this state will have to become a more active player to bring about universal access to healthcare services, including abortion services.

CHAPTER 8

IMPROVING ABORTION CARE SERVICES: ADVOCACY ISSUES

As evident from the survey, induced abortion is on the rise and the increase has been very sharp in recent years. Unfortunately a significant proportion of this growth in induced abortion is somewhere linked to sex-determination and sex-selective abortions. Across classes too there is wide variation in the rate of induced abortion, indicating barriers to access for the poorer groups who have limited purchasing capacities and who also have to depend on private abortion facilities because of inadequate numbers of public facilities.

With regard to access for abortion services the rural areas and the lower socio-economic groups are at a disadvantage due to poor physical access and being forced to depend on private sector for abortion services. Facts like higher use of private sector also by the poor, high non-treatment by the poorer sections, lower abortion rates amongst the poorer groups all point towards a large demand for public abortion services and the need to strengthen them. With 104,120 induced abortions for year 2001, which itself is an underestimate, the current number of public health facilities with adequate facilities to provide safe abortion services, are quite inadequate. The findings of the study clearly points towards better provision of abortion services in public health care facilities. Expanding quality and affordable abortion care services is the need of the hour.

Linked to the issue of quality abortion services is the need to regulate the providers and facilities. The present study as well as many other studies clearly shows that all kinds of providers are in the fray and a very large proportion of such providers are a risk to women's health. In the interest of the latter there needs to be widespread awareness raising about safe abortion within civil society by both the government and professional associations and for this something in the nature of a safe abortion logo can be used to identify certified abortion facilities through a process of accreditation.

Another possible area of intervention which can contribute to improved access is broadening the base of trained providers by including paramedics who can be trained to provide first trimester abortions using safer methods as is done in South Africa and Bangladesh. Further the dais and other traditional and untrained providers can be reskilled to play alternative roles like providing information related to safe abortions and referring cases to certified abortion facilities. This will go a long way in both improving access to quality abortion services as well as reducing risks for women who seek abortion from untrained providers.

Further there is also a need to improve contraceptive availability to couples so as to effectively prevent unwanted pregnancies. Provision of contraceptive information and services should be made an integral part of abortion care. Equally important is the fact that contraceptive acceptance should never be a precondition for provision of abortion services. Service providers should also be sensitized to the contraceptive needs of a woman and the reproductive rights framework in which such needs are to be addressed.

The reasons for abortion indicate that only 25 per cent are within the defined framework of the MTP Act. This is a pointer towards liberalization of the provisions of the act to allow abortion on demand to women and as

a right, and with support from the PNDT Act prohibiting sex-selection test. The data from this study provides clear evidence of increasing sex selective abortions taking place and hence the implementation of the amended PNDT Act with greater vigour becomes critical.

Women have limited autonomy in taking a decision whether to abort or not. There is an urgent need for taking up advocacy and campaign to empower women to have control over their own sexuality. Findings of the study show that women from the upper caste received more rest than woman from other caste groups. Rest for a reasonable period post-abortion is important for her health. Providers can play an important role in making people aware about the rest needed after an abortion.

Another area of concern is methods used for abortion by providers. Data from the study indicates that use of sharp curettage is twice more common amongst private providers, even for first trimester abortions. This is a clear risk for women's health and an area for advocacy for promoting use of safer methods.

With large dependence on private abortion services and care, the out-of-pocket burden on households is tremendous. The total share of the private sector of the abortion market is 87 per cent and the cost is 7.5 times higher in the private sector as compared to the public sector. The private sector, being a large player, should be regulated for its quality and affordability. Monitoring the health care facilities is one way to ensure safe abortion care facilities, and for this besides state agencies the medical associations can play an important role by developing self-regulatory mechanisms.

Rural areas spend more than urban areas because of high access costs. This large out-of-pocket burden is unsustainable because it restricts access of the poorer sections of society who constitute a very large majority. Abortion or for that matter any healthcare cannot be left to whims of market forces and hence price regulation is critical for the sake of equity and access. The findings of this study clearly point out the critical role of purchasing power in accessing abortion services. Because of the lack of the requisite purchasing capacity the poor women's choice to use abortion gets restricted and hence they are reporting lower rates of abortion similar to the manner in which poor report lower morbidity because they have to access health care from the market. Skewed distribution of abortion care services with an advantage towards urban areas needs to be changed with a more even geographical distribution. This would also mean that abortion services in public health facilities like PHCs, which are physically within reasonable access to rural women, need substantial strengthening.

In the last few years some ground has been covered in improving the abortion scenario in the country. The MTP Act has been amended to simplify the registration process and now certification is provided at the district level itself. Medical abortion is also now covered under the MTP Act. Further changes are being discussed to simplify rules, include reasons for abortion which are closer to making abortion being available on demand and to improve monitoring and accountability of abortion facilities. To conclude we are at a threshold of change and this study and other studies undertaken under the aegis of the Abortion Assessment Project – India provide adequate evidence to facilitate a process that will make abortion move closer to becoming a part of reproductive rights.

Annexures

ANNEXURE I

Name of people associated with the study

Members of the core team

Bhagyashree Khaire
Madhuri Sumant
Priti Bhogale
Shelley Saha
Sugandha More
Sunita V Bandewar (Project in-charge)

Field researchers

Achala Taware
Anagha Kulkarni
Archana Mandhare
Ashwini Sarode
Darshana Bansode
Gargee Joshi
Jagruti Gaikawad
Joyti Kudale
Laxmi Mehtre
Prabha Awale
Pramila Dharashivkar
Pushpa Jadhav
Sandhya Dhumal
Sarita Gurjar
Savita Kotwal
Shakuntala Bhalerao
Smita Shahapurkar
Sunita Jadhav
Trupti Joshi
Vaishali Sapkal
Vaishali Satpute

Resource persons during training

Aarti Kulkarni
Abhay Shukla
Amar Jesani
Amita Pitre
Anand Pawar
Arun Pisal
Chandra Karhadkar
Madhuri Talwalkar
Neha Madhiwalla
Sanjeevanee Mulay
Tara Kanitkar
Vandana Palsane
Vasantha Muthuswamy

Administrative and financial support

Dattatray Taras
Kiran Mandekar
Ravi Mandekar
Saramma Mathew
Sharda Mahalle

Members of the Institutional Ethics Committee

Anant Phadke
Jaya Sagade (Chairperson)
Joseph Lobo
Nagmani Rao
Padma Deosthali
Sandhya Srinivasan
Shabana Diler
Soumitra Pathare

Abortion Assessment Project – India

Members of the Technical Advisory Committee

Kamini Rao
Leela Visaria
Manisha Gupte
Narika Namshum
Padmini Swaminathan
R. N. Gupta
Saramma Thomas Mathai
Sudarshan Iyengar
Sudha Tewari
Thelma Narayan

Members of the Ethics Consultative Group

Amar Jesani
Padma Prakash
Ritu Priya
S.V. Joga Rao
Sanjay Gupte
Sudarshan Iyengar (Convenor)
Vasantha Muthuswami
V. R. Muraleedharan

Project Co-ordinators

Ravi Duggal
Vimala Ramachandran

ANNEXURE II

ESTIMATING SAMPLE SIZE
(Detailed calculations for arriving at sample size)

Assumptions for the population parameters and precisions set for the purpose of generalisation	Values
Population parameter/estimation of abortions	33 % of the conceptions are wasted
Confidence interval set	95%
Standard error allowed	Plus or minus 0.01
Birth rate for Maharashtra (source – NFHS-II)	23 per 1,000 population

Calculations:

$$\text{Sample Size} = \sqrt{\frac{p(1-p)}{n}} < 0.01$$

$$n > \frac{p\,(1-p)}{(0.01)^2} = p(1-p) \times 10000 \quad \text{where } p = 1/3 \text{ and therefore } q = 2/3$$

$$n > (1/3) \times (2/3) \times 10000 = 2222$$

where n = sample size
p = estimated proportion or incidence of cases
q = 1- p

Assuming CBR = 23 (according to NFHS II and other data) per 1,000 population.

a. Assuming CBR = 23 per 1,000 population
To capture 2222 conceptions, that is to capture 1481 births and 741 abortions, population to be covered is
= (1481x1000)/23
= 64391

b. Assuming household size to be 5, households to be covered would be
= 64391/5
= 12,878 or approx 13,000 households for conceptions covered in one year.

c. If conceptions were covered for three years, the household number would reduce to one third, that is
13, 000/3 = 4,333

d. 15 percent of the sample was inflated to allow for non-response and design effect, and therefore the sample size was estimated to be 4,973 or approximately about 5,000 households.

ANNEXURE IV

DRAWING HOUSEHOLD FROM RURAL SAMPLE

In rural PSU, we had to draw (a) wards and (b) households.

(a) Drawing sample of wards: Current population of the PSU or village determined the path to follow for drawing the sample of wards before we started house listing. We used the following framework to do so:

- In case the population of the PSU/village was 300 or less, we covered the entire population. This was regardless of the size of the population.
- In case the population was more than 300, we collected information about
  - † Total number of wards and the serial numbers assigned to them.
  - † Wardwise population.
- If there were only two wards, we selected any one using random method.
- If there were more than two wards, we used the PPS method to select two wards for house listing.

(b) Drawing the sample of households: The households were selected using systematic random sampling method. The number of households to be included in the sample, that is, the sample size for each of the rural PSU varied as it was determined by the size of the respective PSU, that is, its total population. Following was the method used to arrive at sample size and in turn the sampling interval for selecting households from the house listing, which was based on computation of various probabilities:

- The probability of selecting an eligible woman

$$f = \frac{n \times 1.15}{N}$$

Where n = total number of eligible women to be interviewed in Maharashtra adjusted for 15 percent to account for non response and other loss; and.

N = total population of eligible women (15 – 54 yr) of the state of Maharashtra as per 1991 census.

For the present study f was calculated to be 0.00036, where
n = 7,000
N = 2,21,00,000

- The probability of selecting a PSU

$$f1 = \frac{a \times Si}{\text{Summation of } Si}$$

where a = total number of rural PSUs to be selected
Si = total population of the selected PSU
Summation Si = total rural population of the state of Maharashtra

- The probability of selecting a household from a PSU was computed as:

$$f2 = \frac{f}{f_1}$$

- When two wards were selected, the number of households to be included in the sample was picked from two wards in proportion to their population. That is ratio/proportion of the population size of the two selected wards was 2:3, and if total households to be sampled were 30, then the distribution of the households over the two wards was 12 and 18.

ANNEXURE VI

DRAWING HOUSEHOLD FROM URBAN SAMPLE

Unlike the rural areas, urban PSUs are selected by three stage systematic random sampling method. At the first level of stratification, all cities and towns in Maharashtra were sub-divided into three strata: self-selecting cities, district headquarter towns and other towns. In our study we have 5 self-selecting cities - Greater Bombay, Thane, Kalyan, Pune and Nagpur and 47 non self-selecting cities.

In self-selecting cities, a two stage sampling design was adopted: selection of Census Enumeration Blocks (CEBs) followed by selection of households in each of the selected CEBs. For district head quarters and other non-self selecting cities a three stage sampling design was adopted: selection of town with PPS, selection of CEBs followed by selection of households in each of the selected CEBs.

The computations for various probabilities are as follows:

- The probability of selecting a city/town in urban Maharashtra (f_1) was computed as follows:

$$f_1 = \frac{a \times s_i}{\sum s_i}$$

where a = number of urban PSUs selected from the state

s_i = the population size of the selected PSU

$\sum s_i$ = total urban population of the state (excluding the population of self selecting cities)

For self selecting cities the value of f_1 is 1.

- The probability of selecting a CEBs from a selected city/town (f_2) was computed as

$$f_2 = \frac{b \times B_i}{\sum B_i}$$

where b = number of blocks to be selected from the city/town.

B_i= the population size of the selected block

$\sum B_i$= the population size of the city/town

- The probability of selecting a household from a selected block (f_3) was computed as:

$$f_3 = \frac{f}{(f_1 \times f_2)}$$

ANNEXURE VII. A

REPORTED PREGNANCY OUTCOME: SUMMARY CHART

Information item	PSU details (Name and code)				
HHDs (sampled and actually interviewed)					
1. Total number of hhds sampled					
2. Number of hhds completely interviewed					
3. Number of hhds refused to participate in the study					
4. Number of hhds found locked					
5. Other reasons for which the hhd could not be interviewed					
Eligible women found and interviewed					
4. Total number of eligible women					
5. Number of eligible women completely interviewed					
6. Number of women refused to participate in the study					
7. Number of women not found upon three visits					
8. Number of women withdrew halfway					
9. Other reasons for which the woman could not be interviewed					
Types of pregnancy outcome (after January 1996)					
10. Total pregnancy outcome in the reference period					
11. Total live births in the reference period					
12. Total spontaneous abortions in the reference period					
13. Total still births in the reference period					
14. Total induced abortions in the reference period					
Types of pregnancy outcome (before January 1996)					
15. Total pregnancy outcome in the life time					
16. Total live births in the life time					
17. Total spontaneous abortions in the life time					
18. Total still births in the life time					
19. Total induced abortions in the life time					
Sex selection tests and abortions (total)					
20. Total number of sex selection tests					
21. Total number of abortion following sex selection tests					

ANNEXURE VII. B

SELF - ASSESSMENT

District and code: **Tehsil and code:** **Name of the PSU and code:**

Name of Anveshi	**TASKS PERFORMED**			
	Houselisitng and sampling (selection of wards, identifying boundaries, actual houselisting, calculating probabilities, sampling interval and selecting the households to be included in our sample, assigning the selected hhds to anveshis)	**Ground work** (travel and logistics, accommodation,	**Preparing for community meetings** (informing the community about the meeting and finding out the suitability of the time and venue, arrangements for the meetings - light, place, putting up the posters	**Actually doing the community meeting** (who did what in the community meeting - poster presentation, introduction of CEHAT and project, documentation etc)

District and code: **Tehsil and code:** **Name of the PSU and code:**

Name of Anveshi	**TASKS PERFORMED**		
	Number of interviews conducted (HHD and W)	**Editing**	**Conducting team meetings at the end of the day and documentation**

ANNEXURE VII. C

COMMUNITY'S RESPONSE TO THE COMMUNITY MEETINGS

Name & code of the PSU	**Whether a separate meeting was held in harijan vasti?**	**Request for repeat meeting.: How far your were able to meet such a request?**	**Participation of**		**At what time the meeting was held** (Morning, evening etc.)	**Location of the meeting** (Was it more advantageous for Male / Female?)
			Men	**Women**		

ANNEXURE VIII

DATING CHART FOR PREGNANCY HISTORIES

			29	28	27	26			
			1972	1973	1974	1975			
1971	30							25	1976
1970	31							24	1977
1969	32							23	1978
1968	33							22	1979
1967	34							21	1980
1966	35							20	1981
1965	36							19	1982
1964	37							18	1983
1963	38							17	1984
1962	39							16	1985
1961	40							15	1986
1960	41							14	1987
1959	42							13	1988
1958	43							12	1989
1957	44							11	1990
1956	45							10	1991
1955	46							9	1992
1954	47							8	1993
1953	48							7	1994
1952	49							6	1995
1951	50							5	1996
1950	51							4	1997
1949	52							3	1998
1948	53							2	1999
1947	54							1	2000
1946	55							0	2001
Calender Year	Years Ago	Age of Woman					Age of Woman	Years Ago	Calender Year

HISTORICAL EVENT CHART

English months	Marathi months	Hindu Festivals	Baudha Festivals	Muslim Festivals	Other Festivls
January	Paush	Makar Sankarnt			
February	Magh	Mahashivratri			
March	Falgun	Holi / Rangpnchami / Dhulivandan		Bakari Id	
April	Chaitra	Gudi Padwa	Ambedkar Jayanti	Moharam (Tajiya)	Good Friday / Ester Sunday / Mahavir Jayanti
May	Vaishakh		Buddha Purnima	Id-a-Mild	
June	Jyeshtha	Vatpaurnima			
July	Aashadh	Aashadhi Ekdshi			
August	Shravan	Nagpanchmi / Pola Rakhipaurnima			
September	Bhadrapad	Ganapati / Anant Chaturdash			
October	Aashvin	Navratra / Dussera			
November	Kartik	Diwali / Kartiki Ekadashi			
December	Margshirsha	Dutta Jayanti	Mahaparinirvan Din	Ramzan Id	Chrishmas

IMPORTANT YEARS

- 15th August 1947 - Independence Day
- 12th July 1961 - Panshet floods
- 1964 - Pandit Nehru Died
- 1977 - Emergency
- 1978 - Defeat of Indira Gandhi in polls
- 30th October 1984 - Assassination of Indira Gandhi
- May 1991 - Assassination of Rajiv Gandhi
- 30th September 1993 - Killari / Latur Earthquake
- 26th January 2001 - Gujarat earthquake
- May 2001 last week - Cyclone in Konkan
- 1st May - Maharashtra Day

Besides this the customany local celebrations information gathered in Area Profile Reorder may be used as reference for calculating age.

ANNEXURE IX

CERTIFICATION BY INSTITUTIONAL ETHICS COMMITTEE

"ABORTION RATE, COST AND CARE: A COMMUNITY BASED STUDY"

Name of the project: ABORTION RATE, COST AND CARE: A COMMUNITY BASED STUDY
Principle Investigator: Dr. Sunita Bandewar
Team Members: Bhagyashree Khaire, Madhuri Sumant, Priti Bhogale, Ravi Duggal, Shelley Saha, Sugandha More, Sunita Bandewar.
Duration: Dec. 2000 to Nov. 2003
Field Work location: whole state of Maharashtra
Funded by: Ford Foundation and Rockfeller Foundation
IEC members: Jaya Sagade, Joe Lobo, Nagmani Rao, Sandhya Srinivasan, Shabana Diler, Soumitra Pathare.
Internal members: Anant Phadke, Neha Madhiwalla, Padma Deosthali
Chairperson: Jaya Sagade

The project titled "ABORTION RATE, COST AND CARE: A COMMUNITY BASED STUDY" was reviewed by the Institutional Ethics Committee during it's tenure in the following three phases -

Phase II: At the stage of finalisation of methodology and prior to launching the fieldwork.
Phase III: After completing the fieldwork.
Phase IV: Prior to publishing the research report.

The IEC has reviewed the methodology, various protocols used for data collection and the draft report of the research study. Various ethical dilemmas faced by the investigators during the phase of data collection were also discussed with the IEC members.

On reviewing the project in all these stages, the IEC states that the team has acted in accordance with the various recommendations given by the IEC in all these phases. The IEC certifies that the research under this project has been conducted as per the IEC protocol.

Jaya Sagade
Chairperson
IEC Cehat

ANNEXURE X

Per cent distribution of the household population age 6 and above by schooling and level of education, and median number of completed of completed years of education, according to age, sex and residence, 2001-02

Age	No schooling	1-4 yrs of schooling (Primary)	5-7 yrs of schooling (Middle)	8-10 yrs of schooling (Matricula-tion)	11-12 yrs of schooling (Higher Sec.)	13 or more years of schooling	Total Per cent	Number of persons	Mean years of schooling
					RURAL				
	Rural-Male								
6 - 9	29.0	69.9	00.8	00.3	00.0	00.0	100.0	775	1.47
10 - 14	05.2	29.5	53.5	11.8	00.0	00.0	100.0	1011	5.14
15 - 19	06.4	06.0	19.9	49.1	16.0	02.7	100.0	895	8.11
20 - 29	12.5	07.6	12.3	35.3	17.3	15.0	100.0	1321	8.57
30 - 39	25.4	15.6	15.4	27.5	07.5	08.7	100.0	1138	6.23
40 - 49	30.9	17.3	19.7	22.6	05.1	04.3	100.0	888	5.19
50 +	48.2	23.2	15.6	08.7	02.6	01.8	100.0	1420	3.21
Total	23.5	22.2	19.6	22.3	07.2	05.2	100.0	74448	5.53
	Rural-Female								
6 - 9	28.9	69.5	01.3	00.4	00.0	00.0	100.0	793	1.55
10 - 14	08.6	31.2	50.9	09.3	00.0	00.0	100.0	970	4.81
15 - 19	21.0	07.9	19.2	42.9	07.4	01.7	100.0	902	6.49
20 - 29	38.7	12.3	19.1	20.1	05.6	04.1	100.0	1485	4.85
30 - 39	57.7	14.8	16.2	08.2	01.4	01.5	100.0	1072	2.73
40 - 49	65.8	15.7	13.2	04.5	00.5	00.3	100.0	775	1.90
50 +	86.3	07.7	04.3	01.2	00.1	00.2	100.0	1355	1.0
Missing	00.0	00.0	00.0	00.0	00.0	00.0	100.0	1	-
Total	45.9	20.3	17.6	12.5	02.3	01.4	100.0	7353	3.33
	Rural-Total								
6 - 9	28.9	69.7	01.0	00.3	00.0	00.0	100.0	1569	1.51
10 - 14	06.9	30.4	52.2	10.5	00.0	00.0	100.0	1983	4.97
15 - 19	13.7	07.0	19.5	46.0	11.7	02.2	100.0	1797	7.30
20 - 29	26.3	10.1	15.9	27.3	11.1	09.3	100.0	2806	6.60
30 - 39	41.1	15.2	15.8	18.1	04.5	05.3	100.0	2210	4.54
40 - 49	47.1	16.6	16.7	14.2	02.9	02.5	100.0	1663	3.65
50 +	66.8	15.6	10.1	05.0	01.4	00.9	100.0	2775	2.03
Missing	00.0	00.0	00.0	00.0	00.0	00.0	100.0	1	-
Total	34.6	21.3	18.6	17.4	04.8	03.3	100.0	14804	4.44
					URBAN				
	Urban-Male								
6 - 9	25.9	72.7	00.8	00.3	00.3	00.0	100.1	359	1.53
10 - 14	03.7	31.1	51.9	13.3	00.0	00.0	100.0	541	5.27
15 - 19	03.4	04.8	16.4	52.5	18.2	04.8	100.0	566	8.70
20 - 29	04.8	04.0	10.8	34.4	17.2	28.7	100.0	998	10.32
30 - 39	10.4	06.3	09.3	37.6	12.7	23.7	100.0	597	9.57
40 - 49	09.7	08.0	15.6	35.8	10.4	20.4	100.0	597	9.11
50 +	16.3	12.9	15.6	28.3	08.8	17.7	100.0	750	8.29
Total	9.6	15.1	16.7	31.2	11.0	16.4	100.0	4574	8.22

Urban-Female									
6 - 9	23.2	74.8	02.0	00.0	00.0	00.0	100.0	353	1.65
10 - 14	02.5	26.4	55.8	14.7	00.2	00.2	100.0	489	5.64
15 - 19	07.7	04.2	15.5	49.8	17.0	05.8	100.0	624	8.41
20 - 29	15.6	04.6	14.3	29.3	11.6	24.6	100.0	975	8.90
30 - 39	24.3	08.3	18.0	28.1	06.8	14.4	100.0	734	7.31
40 - 49	30.8	11.1	18.7	22.0	06.1	11.4	100.0	578	6.14
50 +	50.2	13.7	12.9	13.9	02.7	06.5	100.0	713	4.03
Total	22.6	15.4	19.0	24.7	07.3	11.0	100.0	4466	6.50
Urban-Total									
6 - 9	24.6	73.7	01.4	00.1	00.1	00.0	100.0	712	1.59
10 - 14	03.1	28.8	53.8	14.0	00.1	00.1	100.0	1030	5.45
15 - 19	05.6	04.4	16.0	51.0	17.6	05.3	100.0	1192	8.55
20 - 29	10.2	04.3	12.6	31.8	14.4	26.7	100.0	1975	9.61
30 - 39	17.3	07.3	13.5	32.9	09.8	19.1	100.0	1499	8.45
40 - 49	20.2	09.3	17.1	29.0	08.2	16.1	100.0	1177	7.64
50 +	32.9	13.3	14.3	21.2	05.8	12.3	100.0	1464	6.21
Total	16.1	15.2	17.9	27.9	09.1	13.8	100.0	9049	7.37
TOTAL									
Total-Male									
6 - 9	28.0	70.8	00.8	00.3	00.1	00.0	100.0	1134	1.49
10 - 14	04.7	30.0	53.0	12.3	00.0	00.0	100.0	1552	5.19
15 - 19	05.2	05.5	18.5	50.4	16.8	03.5	100.0	1461	8.34
20 - 29	09.2	06.1	11.6	34.9	17.3	20.9	100.0	2319	9.32
30 - 39	19.4	11.8	12.9	31.6	09.6	14.8	100.0	1901	7.57
40 - 49	22.4	13.6	18.0	27.9	07.2	10.8	100.0	1485	6.77
50 +	37.1	19.6	15.6	15.4	04.7	07.3	100.0	2170	4.96
Total	18.2	19.5	18.5	25.7	08.7	09.4	100.0	12022	6.55
Total-Female									
6 - 9	27.1	71.1	01.5	00.3	00.0	00.0	100.0	146	1.58
10 - 14	06.5	29.6	52.6	11.1	00.1	00.1	100.0	1459	5.09
15 - 19	15.5	06.4	17.7	45.7	11.3	03.3	100.0	1526	7.28
20 - 29	29.5	09.3	17.2	23.8	08.0	12.2	100.0	2460	6.45
30 - 39	44.1	12.2	16.9	16.3	03.6	06.7	100.0	1806	4.59
40 - 49	50.8	13.7	15.5	12.0	02.9	05.0	100.0	1353	3.71
50 +	73.9	09.8	07.3	05.6	01.0	02.3	100.0	2068	1.91
Missing	00.0	00.0	00.0	00.0	00.0	00.0	100.0	1	-
Total	37.1	18.4	18.1	17.1	04.2	04.9	100.0	11819	4.53
Total									
6 - 9	27.6	71.0	01.1	00.3	00.0	00.0	100.0	2281	1.53
10 - 14	05.6	29.8	52.7	11.7	00.0	00.0	100.0	3013	5.14
15 - 19	10.5	06.0	18.1	48.0	14.1	03.4	100.0	2989	7.80
20 - 29	19.7	07.7	14.5	29.2	12.5	16.4	100.0	4781	7.84
30 - 39	31.5	12.0	14.9	24.1	06.7	10.8	100.0	3709	6.12
40 - 49	36.0	13.7	16.8	20.3	05.1	08.0	100.0	2840	5.30
50 +	55.1	14.8	11.5	10.6	02.9	04.9	100.0	4239	3.47
Missing	00.0	00.0	00.0	00.0	00.0	00.0	100.0	1	-
Total	27.6	19.0	18.3	21.4	06.4	07.2	100.0	23853	5.55

The above figures are row percentages

ANNEXURE XI

STANDARD OF LIVING INDEX

Income is known to influence individual's and family's health and social behavior. Though we had a direct question on income of each individual of the household, the data is subject to lot of reporting (non-sampling) errors. The error on income would be more so in developing countries like India where economy is based on agriculture and more than half of the households don't have regular monthly income. Therefore in order to have an idea of the economic status of the household, large-scale surveys in recent years like National Family Health Survey (NFHS) instead of attempting to gather data directly on income had instead developed an index, Standard of Living Index (SLI). SLI was constructed based on information like quality of housing and ownership of other household assets, which serves as a proxy for the economic status of the family.

Following the same procedure adopted in NFHS-2, the present study also constructed the SLI.

1. House type: 4 for pucca, 2 for semi-pucca, 0 for kaccha;
2. Toilet facility: 4 for own flush toilet, 2 for public or shared flush toilet or own pit toilet, 1 for shared or public pit toilet, 0 for no facility;
3. Source of lighting: 2 for electricity, 1 for kerosene, gas, or oil, 0 for other source of lighting;
4. Main fuel for cooking: 2 for electricity, liquid petroleum gas, or biogas, 1 for coal, charcoal, or kerosene, 0 for other fuel;
5. Source of drinking water: 2 for pipe, hand pump, or well in residence/yard/plot, 1 for public tap, hand pump, or well, 0 for other water source;
6. Ownership of house: 2 for yes, 0 for no;
7. Ownership of agricultural land: 4 for 5 acres or more, 3 for 2.0 – 4.9 acres, 2 for less than 2 acres or acreage not known, 0 for no agricultural land;
8. Ownership of irrigated land: 2 if owns at least some irrigated land, 0 for no irrigated land;
9. Ownership of livestock: 2 if owns livestock, 0 if does not own livestock;
10. Ownership of durable goods: 4 each for a car or jeep or tractor or truck; 3 each for a moped/scooter/motorcycle/auto rickshaw, telephone, refrigerator, computer, or washing machine; 2 each for a bicycle, electric fan, radio/transistor, sewing machine, black and white television, water pump, bullock cart, thresher, 1 each for a wooden closet, mattress, almirah, cot/bed, or chair/table.

Index scores range from 0- 13 for low SLI, 14 to 28 for a medium SLI and 29 to 60 for a high SLI. The SLI scores ranges from 0 to 82, that is the lowest score it could have is zero while the highest could be 82 points. However, the maximum score that any households from our sample could achieve has been 61 points. The quartiles values were used to decide the cut off points for these three categories – low, medium, high.

ANNEXURE XII

Per cent distribution of every-married women age 15-54 by highest level of education attained, according to selected background charcteristics, 2001-02

Background characteristic	No schooling	1-7 yrs of schooling	8-10 yrs of schooling	11-12 yrs of schooling	13 and more yrs of schooling	Total	Number of women	Mean years of schooling
Current age								
15 - 19	35.5	30.1	29.7	3.3	1.5	100.0	488	4.95
20 - 24	29.7	29.4	31.0	5.7	4.2	100.0	941	5.75
25 - 29	37.9	26.1	19.7	8.3	7.9	100.0	1036	5.43
30 - 34	43.9	26.8	18.2	3.8	7.2	100.0	896	4.65
35 - 39	46.2	30.5	13.4	2.9	6.9	100.0	782	4.19
40 - 44	48.8	30.2	11.6	3.5	5.9	100.0	514	3.99
45 - 49	51.2	26.9	14.5	2.7	4.6	100.0	521	3.77
50 - 54	54.3	24.3	12.8	2.4	6.2	100.0	334	3.57
Religion								
Hindu	43.4	27.7	18.8	4.5	5.6	100.0	4789	4.58
Muslim	32.1	36.1	22.2	3.6	6.0	100.0	532	5.27
Sikh	12.5	0.0	37.5	12.5	37.5	100.0	8	11.30
Christian	10.0	20.0	44.0	10.0	16.0	100.0	48	8.93
Buddhist	52.8	26.4	16.4	3.2	1.2	100.0	249	3.42
Jain	8.0	18.7	29.3	17.3	26.7	100.0	74	9.94
Religion not repoted	77.8	11.1	11.1	0.0	0.0	100.0	9	1.34
others	33.3	33.3	33.3	0.0	0.0	100.0	3	5.26
Social groups								
Upper castes	10.8	19.7	31.1	8.3	30.3	100.0	340	9.63
DPP	38.0	31.9	21.1	5.4	3.6	100.0	1670	4.86
OBC	40.5	30.1	19.8	4.8	4.8	100.0	1417	4.70
Scheduled castes	54.7	26.5	13.7	2.4	2.8	100.0	541	3.33
Scheduled tribes	72.0	18.1	8.2	0.9	1.0	100.0	668	1.80
Caste unclssified	41.0	24.8	19.9	5.6	8.7	100.0	154	5.13
Non - Hindus	34.6	30.6	22.5	5.1	7.1	100.0	923	5.37
Total	42.0	28.1	19.4	4.6	5.8	100.0	5712	4.71

The above figures are row percentages

ANNEXURE XIII

CALCULATION OF VILLAGE WEIGHT

The village weight was calculated as follows.

The probability of selecting i the PSU from the h th stratum is given by

$$\frac{a_h . S_{hi}}{\sum S_{hi}}$$

This is denoted as f_{1hi}. In this case, the probability refers to selection of PSUs in stratum h and the summation term in the denominator is the total population of stratum h (sum of populations of all PSUs in the stratum) and a_h is the total number of PSUs selected from thath stratum.

If f_{1hi} is the selection probability of the i^{th} village in the h^{th} startum[1], then the village weights are calculated as follows:

$$W_{hi'} = \frac{1}{f_{1hi}}$$

These weights are the normalized so that the weighted number of villages is equal to the unweighted number of villages. The normalized village weights are calculated as follows

$$W_{hi} = W_{hi'} X \frac{A}{\sum w_{hihi}}$$

where a is the number of PSUs (rural or urban as and when applicable) selected from the state.

ANNEXURE XIV

ESTIMATE OF UNDERREPORTING OF SEX SELECTIVE ABORTIONS FOR THE PERIOD 1996-2000

Sex ratio = Live birth male (LBM) / Live birth female (LBF);

Pregnancy outcome	Number of pregnancies	Number of sex detection tests	Actual live births 1996-2000		Expected births 1996-2000 (if sex selective abortions had not occurred)	
1996-2000	1996-2000	1996-2000	M	F	M	F
LB	2816	A 50	LBM	LBF	LBM	LBF + C
			1469	1347	1469	1347+16= 1363
SB	28	B 2	-	-	-	-
SA	160	- 1	-	-	-	-
IA	141	C 16	-	-	-	-
Total	3145	D 69	1469	1347	LBM	LBF + C
					1469	1363

If it is assumed that all induced abortions after sex detection test are of female fetuses (still births are ignored.), then the number of female births should have been LBF + C and hence

Sex ratio without sex selective abortions = LBM/ (LBF+C).

From the table,

Actual sex ratio = LBM/LBF = 1469/ 1347
= 1.09057 or 109.1 males per 100 female births.

This is much higher than the sex ratio of 106 or 105 male births per 100 female births as normally accepted indicating that there have been sex selective abortions.

Now, if it is assumed that <u>all induced abortions after sex detection test were of female fetuses</u> (still births are ignored), that is, the C induced abortions were female fetuses, and would have resulted in live birth had these not been aborted (the risk of spontaneous abortion after the first trimester and of still birth rate is very small)

There would have been LBF + C = 1347 + 16 = 1363 female live births, and hence, the sex ratio would have been = 1469/1363

= 1.078 or 107.8 males per 100 female births.

This is also higher than the sex ratio of 106 or 105 male births per 100 female births found in India thus indicating that not all the sex selective abortions are reported under sex determination tests.

Alternatively, one can estimate the number of sex selective abortions from the actual sex ratio and compare this to the number obtained in the survey (C).

No. of male births = 1469.

Expected no. of female births given a sex ratio of 106
= 1469 x (100/106)
= 1386.
Actual no. of female births = 1347
indicating 1386 - 1347 = 39 missing female births or sex selective abortions.
Female fetuses aborted as inferred from induced abortions following sex detection tests = C = 16.
1386 - (1347 + 16) = 23 is the number of abortions of female fetuses not reported.

Thus, while 16 sex selective abortions have been captured by the question on sex-detection tests, an estimated 23 have not been. This suggests that ***a little over half of sex selective abortions have not been captured in the survey.***

Please not that this cannot be used to provide n estimate of error as such. The sampling error could be large. However, the evidence is suggestive of an omission of sex selective abortions beyond those captured by the question on sex detection test. In that sense, this gives some idea of this type of non-sampling error.

ANNEXURE XV

ESTIMATES OF SAMPLING ERRORS

Sampling errors and non-sampling errors are the two kinds of errors encountered in estimates from sample surveys. While the sampling error is influenced by the size of the sample and the sampling design adopted, non-sampling errors arise in the process of data collection and data processing. Misidentification of sample respondents, misunderstanding of questions either by the interviewer of the respondent, intentional concealing of facts by respondent, errors in recollection of events, errors while data entry are examples of non-sampling errors. All possible precautions were taken and special efforts were made to avoid such non-sampling errors as far as possible within the time and budget constraints. It is impossible to collect data totally free from non-sampling errors in large-scale surveys from semi-literate population on sensitive areas of the kind we are concerned. As we are aware that evaluation the quantum of non-sampling errors is very difficult, all possible efforts were made to minimize such errors.

Given the same design and the sample size, many samples could be drawn. The estimate from each of these might differ. The sampling error is the standard deviation of these estimates among all possible samples. An estimate of this can be made for any given statistic and that is known as standard error (SE) and the distribution of the sample statistic is known as sampling distribution. For large sample size, a mean or a percentage is distributed normally. Hence the statistic minus 1.96 SE and the statistic plus 1.96 SE give a range within which 95 percent of times the sample statistic will be, if all possible samples of identical design and size are selected. Thus the SE helps in measuring the sampling error.

Stratified cluster sampling is the sampling design followed in this survey. The method of computing sampling error appropriate to the design is given below. In this report percentage or average is considered as a ratio estimate, y = x/n, where x is the value of the variable X and n is the number of cases in the group or subgroup. The SE is computed using the formula.

$$\textbf{SE} = \sqrt{\text{var}(y)} = \textbf{sqrt}\ [\frac{1-f}{n^2}\sum_{i=1}^{I}\{\frac{m_i}{m_i-1}(\sum_{j=1}^{m_i}z_{ij}^2-\frac{z_i^2}{m_i})\}]$$

where $Z_{ij} = x_{ij} - yn_{ij}$

$Z_i = x_i - yn_i$

And
i stands for the stratum varying from 1 to I,
m_i is the number of PSUs selected in the i^{th} statrum,
x_{ij} is the sum of x in j^{th} PSU in the i^{th} stratum,
n_{ij} is the number of cases in j^{th} PSU in the i^{th} stratum,
x_i is the sum of x in the i^{th} stratum,
n_i is the number of cases in the i^{th} statum, and
f is the overall sampling fraction.

Stadandard error is not computed for all variables. Only for some important variables sampling errors are computed. Table 1 gives the list of variables for which the SE is computed. Tables 2 gives the value of the statistic (y), the standard error (SE), the number of cases (n) and the 95 percent confidence interval (y$\pm$1.96 SE) for each variable.

Table 1. List of selected variables for sampling errors, 2001 - 2002

Variable	Estimate	Base population
Sex ratio	Ratio	De-jure household population
Illiterate	Proportion	De-jure household population age 6 and above
Ever Married women	Proportion	Ever married women age 15-54
Number of children ever born	Mean	Ever married women age 15-54
Number of still birth	Mean	Ever married women age 15-54
Number of spontaneous abortion	Mean	Ever married women age 15-54
Number of induced abortion	Mean	Ever married women age 15-54
Number of conceptions	Mean	Ever married women age 15-54
Number of living children	Mean	Ever married women age 15-54
Number of pregnancies ending in abortion	Proportion	Ever married women age 15-54

Table 2. Estimates of sampling errors for selected indices, 2001 - 2002

	Variable / Residence	Value (R)	Standard error (SE)	Number of cases (n)	Standard error assuming SRS (SER)	Design effect (DEFT)	Relative standard error (SE/R)	Confidence limites	
								R-2SE	R+2SE
1.	Sex ratio (De-jure household population								
	Total	976	17.699	27123	0.1446	0.1224	0.018	975	976
2.	Illiterate (De-jure household population age 6 and above)								
	Total	0.276	0.031	6575	0.1561	0.1989	0.113	0.214	0.338
3.	Currently married women (Ever married women age 15-54								
	Total	0.733	0.017	5545	0.1042	0.1010	0.023	0.699	0.767
4.	Number of children ever born (Ever married women age 15-54)								
	Total	3.000	0.031	5233	0.0222	1.4066	0.010	2.938	3.062
5.	Number of still birth (Ever married women age 15-54)								
	Total	0.043	0.003	5233	0.00323	1.0268	0.077	0.036	0.050
6.	Number of spontaneous abortion ((Ever married women age 15-54)								
	Total	0.140	0.006	5233	0.00624	1.0361	0.046	0.127	0.153
7.	Number of induced abortion (Ever married women age 15-54)								
	Total	0.081	0.005	5233	0.00451	1.1042	0.061	0.071	0.091
8.	Number of conceptions (Ever married women age 15-54)								
	Total	3.270	0.031	5233	0.0232	1.328	0.009	3.208	3.332
9.	Number of living children (Ever married women age 15-54)								
	Total	2.734	0.027	5233	0.01957	1.3705	0.010	2.680	2.787
10.	Number of pregnncies ending in abortion (Ever married women age 15-54)								
	Total	0.068	0.009	5233	0.0232	0.374	0.128	0.050	0.085

Note : Design effect (DEFT) is the ratio of standard error divided by standard error assuming simple random sampling

SURVEY INSTURMENTS – I

AREA PROFILE RECORDER

Confidential: For research only
Schedule No.:_____
PSU No.: _____

PREGNANCY OUTCOME: A COMMUNITY BASED STUDY

A household survey undertaken by
Centre for Enquiry into Health and Allied Themes (CEHAT), Pune.

AREA PROFILE RECORDER (APR – IS)

VISIT DETAILS	
Date ***(Started on):***	
Date ***(Completed on):***	
Name of the team leader:	Signature and date:
Checked by ***(Name):***	Signature and date:

1. IDENTIFICATION OF THE STUDY AREA

101	Name of the Village / Town:	Village / Town code:
102	Name of the Taluka:	Taluka code:
103	Name of the District:	District code:
104	Name of the Region:	Region code:
105	Municipal Corporation Survey no.: ***(please record actual survey number)***	NA ***(in case of rural area)***.....9
106	Ward no. ***(please record the actual number):***	NA ***(in case of rural area)***.....9
107	Village / Ward / Slum name	PSU code no.:
APPLICABLE ONLY FOR SLUM AREA		
108	Name of the slum:	NA ***(if not slum)***.....9
109	Status of the slum:	Recognised:…….....1 Unrecognised: ....….....2 NA ***(in case of nonslum area)***….....9
110	Year of establishment of the slum ***(pl. record the actual year):***	Year: NA ***(in case of nonslum area)***.....….....9

2. AREA, POPULATION & COMMUNITY COMPOSITION

Sr No	INFORMATION ABOUT	RESPONSES	SOURCE OF INFORMATION *(Type of record / office)*	YEAR OF INFORMATION *(Please ask and record the year)*
201	Area of the village/ward/slum ***(in Hectares):*** ***(from Grampanchayat / ward office)***			
202	Current population of the village/ward/slum: ***(from Grampanchayat / ward office)***			
203	Total number of households in the village/ward/slum: ***(from Grampanchayat / ward office)***			
204	Number of Below Poverty Level (BPL) households: ***(from Grampanchayat / ward office)***			

Sr No	INFORMATION ABOUT	RESPONSES
205	Dominant religious groups/communities[1]:	1 2 NA.....9
206	Co-dominant religious groups/communities[2]:	1 2 3 4 NA.....9
207	Other religion:	1 2 3 4 NA.....9
208	Dominant caste groups[1]:	1 2 NA.....9
209	Co-dominant caste groups[2]:	1 2 3 4 NA.....9
210	Other caste:	1 2 3 4 NA.....9
211	Dominant tribal groups/communities[1]	1 2 NA.....9
212	Co-dominant tribal groups[2]	1 2 NA.....9
213	Other tribal groups	1 2 3 4 NA.....9

[1] Dominant religion/dominant caste/ dominant scheduled tribe: Those religion /caste / tribe which have a population of more than 50 per cent in that PSU.

[2] Co-dominant religion/dominant caste/ dominant scheduled tribe: Those religion /caste / tribe which have a population of less than 50 per cent & more than 25 per cent in that PSU.

3. ACCESS: ROADS AND TRANSPORT FACILITIES

Sr No	INFORMATION ABOUT	RESPONSES
301	Distance of the village/area from the nearest town / city:	Name of the Town / City: _____ _____ Kms NA ***(in case of urban PSUs)***……..... 9
302	Distance of the village / ward / slum from the nearest all weather road: ***(If the village/ward/slum itself is connected by all weather road, record '0' km)***	_____Kms
303	Distance of the village from the nearest bus stand / stop (state transport) ***(If available in the ward/slum record '0' km)***	_____Kms NA ***(in case of urban PSUs)***…….....9
304	Distance of the ward/slum from the nearest bus stand / stop: ***(If available in the ward/slum record '0' km)***	_____Kms NA ***(in case of rural PSUs)***…….....9
305	Distance of the village / ward / slum from the nearest railway station: ***(if available in the village/ward/slum record '0' km)***	_____Kms
306	Distance of the village / ward / slum from the nearest private transport stand / stop (Tempo, Six sitter, Jeep etc.): ***(If available in the village/ward/slum record '0'km)***	_____Kms

4. ACCESS TO BASIC AMENITIES
(Electrification, Drinking water and Sanitation)

Sr No	INFORMATION ABOUT	RESPONSES
401	Is the village / ward / slum electrified?	Yes ……..…….....1 No ……..…….....2
402	For the majority of the population what are the main sources of drinking water in this village / ward / slum? ***(Record all sources)***	Pipe line ……..…….....A Bore well ……..…….....B Well……..…….....C River/pond/lake……..…….....D Other ***(specify)*** _____E
403	Whether drinking water was available round the last year?	Yes ….....……..…….....1 ⟶ ***Skip to 406*** No ……..…….....2
404	During last 5 years, how many months in a year on average there has been shortage of water in this area?	Months ☐☐ Days ☐☐
405	During water shortage, what is the water supply arrangement to the village / ward / slum? ***(Record all sources)***	Public supply ……..…….....A Private supply ……..…….....B Other ***(specify)*** _____C
406	For the majority of the population what type of drainage facility do you have in the village / ward / slum? ***(Record all sources)***	Underground drainage .....A Open drainage ……..…….....B No facility C
407	For the majority of the population what type of toilet facility do you have in the village/ward/slum?	Open .....1 Community …… .....2 Individual/private…..…..…….....3

5. ACCESS TO EDUCATION FACILITIES

Sr No	INFORMATION ABOUT		RESPONSES
	Facilities	**Is the facility available in the village/ ward** ***(● If not available in the village/ward record distance from the area in kms*** ***● If facility available record '0' km)***	**Which transport is generally used for going to School / University?** ***(If the facility is available within the PSU, record NA)***
501	Primary School (1st to 4th standard)	_____ Kms	NA.....…….....9
502	Middle school (5th to 7th standard)	_____ Kms	NA.....…….....9
503	Secondary school (8th to 10th standard)	_____ Kms	NA.....…….....9
504	Higher Secondary school (11th to 12th standard)	_____ Kms	NA.....…….....9
505	College / University	_____ Kms	NA.....…….....9

6. ACCESS TO HEALTH CARE SERVICES: NONINSTITUTIONAL/ INSTITUTIONAL

A. Noninstitutional Health Care Service Providers

Sr No	Type of health care service providers	Whether available in the village/ward/slum	How many?
601	Traditional Healer ***(Bhagats etc who treat in a traditional and unscientific way)***	Yes ……..... .....1 No 2	
602	*Zola Chhap* ***(the ones who are mobile)***	Yes ……..... .....1 No 2	
603	Local Abortionist	Yes ……..... .....1 No 2	
604	Traditional Birth Attendant	Yes ……..... .....1 No 2	
605	Anganwadi Worker	Yes ……..... .....1 No 2	
606	Community Health Guide / Worker (CHW)	Yes ……..... .....1 No ..... 2 NA ***(in case of urban PSU)***.....9	

Sr No	Type of health care service providers	Whether visit village regularly?
607	MultiPurpose Worker (MPW)	Yes ……..... 1 No .....2 NA ***(in case of urban PSU)***.....9
608	Auxiliary Nurse Midwife (ANMs)	Yes ……..... 1 No .....2 NA ***(in case of urban PSU)***.....9

B. Institutional Health Care Services

Sr No	Type of health care facility	Whether available in the village/ward/slum? *(● If not available, record distance from the nearest facility (in kms) ● Please record '0' km if the facility is available in the area itself)*	Which are the services provided? *(PI record as stated)*	Whether provides abortion care?	Type of service providers *(ANMs, GP, Gynaec, surgeon, paediatrician, others)*	Does any of these is engaged in private practice? Who?
609	Govt. Mobile Health care unit	_____Kms NA.....9		Yes …….. 1 NA.....9		
610	Sub-centre*	_____Kms NA.....9		Yes …….. 1 NA.....9		
611	Primary Health Centre* (PHC)	_____Kms NA.....9		Yes …….. 1 No.....2		
612	Rural/ Cottage Hospital* / Com Health Centre	_____Kms NA.....9		Yes …….. 1 No.....2		
613	Health Post** (Govt. Hospital)	_____Kms		Yes …….. 1 No.....2 NA.....9		

**Not applicable for the urban PSUs*
***Non applicable in case of rural PSUs*

Sr No	Type of health care facility	Whether available in the village/ward/slum? *(● If not available, record distance from the nearest facility (in kms) ● Please record '0' km if the facility is available in the area itself)*	Which are the services provided? *(PI record as stated)*	Whether provides abortion care?	Type of service providers *(ANMs, GP, Gynaec, surgeon, paediatrician, others)*	Does any of these is engaged in private practice? Who?
614	District level / tertiary hospital** ***(with in-patient care)***	_____Kms		Yes ……..…. 1 No.....2		
615	Municipal/ Corporation hospital	_____Kms		Yes ……..…. 1 No.....2		
616	Private clinic/ Dispensary ***(only outpatient)***	_____Kms		Yes ……..…. 1 No.....2		NA.....9
617	Private hospital ***(with in-patient care)***	_____Kms		Yes ……..…. 1 No.....2		NA.....9
618	Health care facility of NGO	_____Kms		Yes ……..…. 1 No.....2		NA.....9
619	Other health care facility ***(specify)***	_____Kms		Yes ……..…. 1 No.....2		NA.....9

***Non applicable in case of rural PSUs*

Sr No	INFORMATION ABOUT	RESPONSES
620	Does the village/ward/slum have X-ray, blood and urine test facilities?	Yes ……..... 1 ⟶ ***Skip to 622*** No 2
621	If the X-ray, blood and urine test facilities are not available, then record the nearest such facility available? ***(Ask the name of that village/town)***	_____ Km Village / Town: _____
622	From where does the people from this PSU access sonography facility?	Village / Town: _____ Tal. name: _____ District name: _____ Name of the provider: _____
623	Does the public health care facility based in the village / ward or/the nearest one has an ambulance/ vehicle?	Yes ……..... 1 No ..... 2 ⟶ ***Skip to 625***
624	Is the above facility by and large made available to people when required?	Yes ……..... 1 No 2

C. Minimum Public Health Care Facilities Available[1]

Sr No	PUBLIC HEALTH CARE SERVICES	RESPONSES
625	Are deliveries in your village conducted by trained birth attendant using a kit?	Yes .....1 No 2
626	In your village, do women during pregnancy get iron tablets and TT shots?	Do not get at all or very inadequate .....1 Sometimes inadequate.....2 Always & quality services.....3
627	Does the sub-centre have adequate and daily supply of basic medicines?	Yes .....1 No 2
628	At PHC, do you get all the necessary medicines free of cost?	All medicines available.....1 Some medicines are to be bought.....2 Most of the medicines are to be bought 3
629	Is doctor available 24 hrs for all the days in the PHC?	Yes .....1 No 2
630	Does the PHC have normal delivery facility?	Yes .....1 No 2

[1] *Not applicable for urban PSUs*

7. ACCESS TO OTHER FACILITIES

Sr No	INFORMATION ABOUT	RESPONSES
	Facilities	Whether available in the village/ward/ slum?
701	Pharmacy/Medical shop	Yes .....1 No 2
702	Fair price shop	Yes .....1 No 2
703	Post office	Yes .....1 No 2
704	Telephone	Yes .....1 No 2
705	Bank	Yes .....1 No 2
706	Weekly Market	Yes .....1 No 2

8. NON GOVERNMENT ORGANISATION (NGO) AND THEIR ACTIVITIES

801. Is there any NGO active in the village / ward / slum: Yes ……..... 1

No ……..... 2 ⟶ ***Skip to 807***

Sr No	Name of the NGO	Is it within the village / ward / slum?	For how many years are they working here?	What kind of services / interventions are they providing/making in the area?
802	**803**	**804**	**805**	**806**
		Yes ……..1 No ……2	_____ completed year of work	
		Yes ……..1 No ……2	_____ completed year of work	
		Yes ……..1 No ……2	_____ completed year of work	
		Yes ……..1 No ……2	_____ completed year of work	

Community Level Mandals

Sr No	Whether any of the following Mandals are a ctive in the village?		What kind of activities were organized in the last year?
807	Mahila Mandal	Yes ……..1 No……..2 ⟶ ***Skip to 808***	
808	Bhishi Mandal	Yes ……..1 No……..2 ⟶ ***Skip to 809***	
809	Bhajan Mandal	Yes ……..1 No……..2 ⟶ ***Skip to 810***	
810	Other ***(specify)***	Yes ……..1 No……..2 ⟶ ***Skip to 901***	

9. MAJOR EVENTS IN THE AREA

Yearly festivals and fairs:			
901	Major village / community festivals or fairs: ***(Record the month in which it is celebrated)***		
	Name of the community festivals / jayantis		**Which month of the year?**
	a)		
	b)		
	c)		
	d)		
	e)		
Epidemics:			
902	Major epidemics & diseases in the village / community/ area:		
	Epidemic or disease		**Record month and year**
	a)		
	b)		
	c)		
	d)		
Natural calamity:			
903	Whether the village/community had to face any of the following calamities?		**Which year?**
	1) Flood	Yes .....1 No .....2 ⟶ ***Skip to 2***	
	2) Drought (wet)	Yes .....1 No .....2 ⟶ ***Skip to 3*** NA ***(in case of urban PSU)*** 9	
	3) Drought (dry)	Yes .....1 No .....2 ⟶ ***Skip to 4***	
	4) Earth Quake	Yes .....1 No .....2 ⟶ ***Skip to 5***	
	5) Other ***(specify)***	Yes .....1 No .....2 ⟶ ***Skip to 1001***	

10. SOURCE OF INFORMATION AND OBSERVATION

1001. Any other comment/observation by the researchers/investigators about the PSU / area:

_____

_____

_____

1002. Major sources for obtaining the information:
(*Record all the sources contacted)*

Talathi	A
Sarpanch	B
Women Panchayat member	C
Men Panchayat member	D
Local informal leader	E
Gram sevak	F
School teacher	G
Health personnel	H
Local level worker	I
Corporator	J
Person in the ward office	K
Other ***(specify)***	L

SURVEY INSTURMENTS - II

HOUSEHOLD INTERVIEW SCHEDULE

Confidential: For research only
Schedule no: _____
PSU No:_____

PREGNANCY OUTCOME: A COMMUNITY BASED STUDY

A household survey undertaken by

Centre for Enquiry into Health and Allied Themes (CEHAT), Pune.

HOUSEHOLD INTERVIEW SCHEDULE (HHD-IS)

INTERVIEW: VISIT/S MADE AND STATUS					
Visit details	1st Visit	2nd Visit	3rd Visit	Total visits / time	
Date				Total visits made	
Time required for conducting interview				Total time spent	
STATUS OF THE INTERVIEW CONDUCTED: (interview completed / incomplete / other)					
Interview completed 1					
Interview incomplete: Could not meet appropriate respondents after three visits 2					
Refusal: Refused to participate in the study ***(Record reason)*** 3					
Other ***(Specify)*** 4					

Interviewer's name:	Signature & date:
Checked in the field by ***(Name):***	Signature & date:

TOTAL ELIGIBLE WOMEN ***(ever married women aged 15 to 60)***_____***(to be calculated at the end from 'Household members: Profile' chart)***
TOTAL ELIGIBLE WOMEN ***(ever married women aged 15 to 54)***_____***(to be calculated at the end from 'Women Schedule: Profile' chart)***

1. IDENTIFICATION OF THE FIELD LOCATION

101	Household no. ***(From the house listing):***	
102	Name of Village/Town:	Village/Town code:
103	Name of Taluka:	Taluka code:
104	Name of District:	District code:
105	Name of the Region:	Region code:
106	Corporation or Municipal Survey No:	NA ***(in case of rural area)***…….....9
107	PSU No.:	

Other details

108	Address of the household:	
109	Could you please tell us any landmark to locate your household? ***(For investigator: PI also record the landmarks that are observed/noticed by you)***	
110	What is your name? (***Research participant):***	
111	What is your relationship with the head of the household?	
112	How many years your family is living in this village/slum/ward? ***(Record in completed years. If less than 1 year, record it in months)***	_____ Years _____ Months

2 B. HEALTH CARE SERVICES UTILISED BY THE HOUSEHOLD IN GENERAL

Sr No	QUESTIONS	RESPONSES	SKIP TO / INSTRUCTIONS
212	Generally where do you go when anyone in your household falls sick?	Home remedy.....A Local untrained health care provider.....B Government health care facility .....C Private health care facility .....D Other ***(specify)*** _____E	
213	Why do you go here/to them only for treatment?		
214	Did anyone in your household fell sick in the last one month?	Yes.....1 No.....2 ⟶ ***Skip to 301***	
215	If yes, what was the illness?		
216	Where did you take him/her for the treatment?	Home remedy.....A Local untrained health care provider.....B Government health care facility .....C Private health care facility .....D Other ***(specify)*** _____E	
217	Why did you take her/him there to them only for the treatment?		

3. ACCESS TO BASIC AMENITIES
(Drinking water, Source of lighting, Fuel and Sanitation facilities)

301	Usually where do you bring drinking water from?	Tap … ……..1 Well…….....2 Tubewell / Borewell…….....3 River/Pond/Lake.…….....4 Other ***(specify)*** _____5	
302	Do you own this tap/well/tubewell?	Yes.....1 No.....2	
303	At what distance is the drinking water source from your house? ***(write unit of the distance stated-furlang, mile, km etc.)***		***If there is a tap in house skip to 307***
304	How much time is required to make one trip? ***(including waiting time)***		

Sr No	QUESTIONS	RESPONSES	SKIP TO / INSTRUCTIONS
305	How many trips are generally required for daily water requirement of your household?	.....trip/trips	
306	Who fetches water generally?	Women in the household…….....1 Men in the household.....2 Both men & women…….....3 Servants…….....4 Other ***(specify)*** _____5	
307	Do you have electric connection (electricity) at your house?	Yes ….....1 No ….....2	
308	What type of fuel does your household mainly use for cooking?	Wood …… ….....1 Crop residual ….....2 Kerosene …….....3 Cow dung cakes …….....4 Coal/coke/lignite …….....5 Charcoal …….....6 Electricity …….....7 Liquid petroleum gas (LPG).....8 Biogas…….....9 Other ***(specify)***_____10	***Skip to 313***
309	How much distance do you have to travel to get wood? ***(write unit of the distance stated: furlang, mile, km etc.)***		
310	How much time is required to make one trip?		
311	How many trips are generally required for daily fuel wood requirement of your household?	.....trip/trips	
312	Who fetches wood generally?	Women in the household…….....1 Men in the household.....2 Both men & women.....3 Servants…….....4 Other ***(specify)*** _____5	
313	How many rooms do you use including kitchen?		
314	Do you have bathroom facility in your house?	No bathroom .....1 Outside the house ….....2 Inside the house 3	
315	What kind of toilet facility does your household have?	Open/No facility.....….....1 Community facility..... ...2 Own pit toilet..... ..3 Own flush toilet 4	

4. STAPLE FOOD GRAINS : SOURCES AND ADEQUACY

401	How do you meet the needs of staple grains for consumption of your own household? *(For investigator: pl record multiple sources, if any)*						
	Grains	**Own farm**	**Market**	**Ration (PDS)**	**Credit/ Loan**	**Not consumed**	**Other *(specify)***
	a) Rice						
	b) Wheat						
	c) Jowar						
	d) Bajra						
	e) Nachani						
	f) Cereals						

Sr No	QUESTIONS	RESPONSES	SKIP TO / INSTRUCTIONS
402	How many times members of your household usually eat in a day?	.....times	
403	How many times usually men in your household take breakfast and evening snacks?	.....times	
404	How many times usually women in your household take breakfast and evening snacks?	.....times	
405	Do members in your household get adequate food to eat throughout the year?	Yes.....1 ⟶ ***Skip to 501*** No.....2	
406	How many days/months in a year do you have food deficiency?	_____Days / Months	

5. ASSET OWNERSHIP AND OTHER SOURCES OF FAMILY INCOME

Housing / abode: Ownership and type

Sr No	QUESTIONS	RESPONSES	SKIP TO/ INSTRUCTIONS
501	Do you own this house?	Yes ..... 1 No 2	
502	Does your household own any other house?	Yes ..... 1 No 2	
	Type of house		
503	Roof - ***(To be observed and recorded)***	Thatched/Cloth/Sack ..... A Tiled/Tins ..... B Cement ..... C Other ***(specify)*** ..... D	
504	Wall -***(To be observed and recorded)***	Thatched/cloth/sack ..... A Tiled/Tins ..... B Cement ..... C Other ***(specify)*** ..... D	
505	Floor -***(To be observed and recorded)***	Mud/Cowdung ..... A Cement/Koba ..... B Shahabadi tiles ..... C Polished tiles ..... D Wood ..... E Other ***(specify)*** ..... F	
	Agricultural land and livestock: Ownership and type		
506	Does your household own any agricultural land?	Yes, household ownership ..... A Yes, joint ownership ..... B No ..... C → ***Skip to 509***	
507	How much land does your household own? ***(Record the unit as stated)***	Household ownership ..... (Size and unit) NA 9	Joint ownership ..... (Size and unit) NA 9
508	Out of this, how much is irrigated?	Household ownership ..... (Size and unit) ..... NA 9	Joint ownership ..... (Size and unit) NA 9

Sr No	QUESTIONS	RESPONSES	SKIP TO/ INSTRUCTIONS
509	Does your household own any livestock?	Yes ..... 1 No ..... 2 ⟶ ***Skip to 513***	
510	Does your household earn any income from the live-stock?	Yes ..... 1 No. ..... 2 ⟶ ***Skip to 513***	
511	What is the monthly income of the household from the livestock? ***(Record as stated)***	Rs. ..... /- Month Or Rs. ..... /- Year	
512	Can your household sustain itself without the income you get from livestock?	Yes ..... 1 No 2	

Other Assets

513	Does your household own any of the following?			
	Asset	**Yes**	**No**	
	1. Wooden shelf (in kitchen)	1	2	
	2. Fan	1	2	
	3. Radio/Transistor	1	2	
	4. Furniture (bed, chairs, table etc.)	1	2	
	5. Mattress	1	2	
	6. Almirah/Cupboard	1	2	
	7. Bed/Divan/Cot	1	2	
	8. Television	1	2	
	9. Telephone	1	2	
	10. Refrigerator	1	2	
	11. Sewing machine	1	2	
	12. Bullock cart	1	2	
	13. Water pump	1	2	
	14. Bicycle	1	2	
	15. Motorcycle/Moped/Scooter	1	2	
	16. Car/Jeep	1	2	
	17. Tractor	1	2	
	18. Thrasher	1	2	
	19. Other ***(specify)***	1	2	

Sr No	QUESTIONS	RESPONSES	SKIP TO/ INSTRUCTIONS
514	Some of these assets, such as sewing machine, bullock cart, car/jeep, tractor, thrasher, are income generating. Does your household earn anything from any of the above assets?	Yes ..... 1 No ..... 2 NA 9	→ ***Skip to 517***
515	What is the monthly income of the household from these assets during the last one year? ***(Record as stated)***	Rs. ..... /- Month Or Rs. ..... /- Year ..... Assets ***(Write the type of asset)***	
516	Can your household sustain itself without the income you get from these assets?	Yes ..... 1 No 2	
517	Which type of kitchenwares do you mostly use?	Clay ..... 1 Aluminium ..... 2 Cast iron ..... 3 Brass ..... 4 Stainless Steel ..... 5 Glass ..... .6 Other ***(specify)***. 7	

Sr No	QUESTIONS		RESPONSES	SKIP TO/ INSTRUCTIONS
610	Are there any persons other than **'usual'** members from the household who send money to support the household expenses?		Yes …….....1 No …….....2 ⟶ ***Skip to 615***	
Sr. no.	**Name**	**Relationship to the head of household**	**Income**	
611	**612**	**613**	**614 A**	
1			Rs. _____/-	
2			Rs. _____/-	
3			Rs. _____/-	
4			Rs. _____/-	
		Total Income ***(per month / year)***	**614B:**	
615	Are there any other sources of income for your household? For ex: another house owned by you is rented out, STD booth, VCR, Computer, Ricksha or any such thing?		Yes …….....1 No …….....2 ⟶ ***Skip to 701***	
616	What is the monthly income from this/these source/s? (***Record all source of income stated***)		Source1: Rs._____per month/ yr. Source2: Rs._____per month/yr. Source3: Rs._____per month/yr. Source4: Rs._____per month/yr.	
		Total	Rs._____ per month/yr.	

617	***TOTAL ANNUAL INCOME OF THE HOUSEHOLD:*** ***(511+515+609B+614B+616) (To be calculated)***	Rs._____per month / year

7. RELIGION AND CASTE

701	What is your ***(Name - head of the household)*** religion***?***	Hindu ..... 1 Muslim ..... 2 Sikh ..... 3 Buddhist/Neo Buddhist ..... 4 Jain ..... 5 Christian ..... 6 No religion ..... 7 Other ***(specify) .....*** 8	
702	What is your ***(Name - head of the household)*** caste/tribes***?*** ***(pl record the stated caste/tribe)***	Caste ***(specify) .....*** 1 Tribe ***(specify) .....*** 2 No caste 3	

LETTER OF INTRODUCTION AND INFORMED CONSENT FORM

(for a responsible household member who would be the potential research participant by responding to the household interview schedule)

Respected Madam/Sir,

Greetings!

This is to introduce to you our institution, ourselves and the type of work that we are engaged in. This is also to inform you about this study and seek your consent to participate in the study.

CEHAT (Center for Enquiry into Health and Allied Themes), is a research centre of Anusandhan Trust. Cehat is engaged in addressing health related issues from a social perspective.

'Women's health' is one of the prime areas of concern at CEHAT. In India, people do not have access to quality health care services even today. We spend a lot of money to access health care services from the private sector because of sub-standard government health care services. These circumstances affect the women and children the most. Patriarchal social norms and women's secondary status in our society, also contribute to making women's access to health care services difficult. We, therefore, need to undertake studies to enhance our understanding of the ground realities from a social perspective to help change this scenario. This study is a part of this process. To achieve this end, we are going to collect information about women's obstetrics history, including spontaneous and induced abortion, and how it affects women's health.

In order to understand this issue we would need to understand the socio-cultural background of the household. For this we would require some basic information about your household like age, education, occupation and marital status of each member of the household. This would be collected from one of the adult and responsible members of your family. This information would constitute one of the important analytical categories for us to examine variations in the patterns of women's health status.

This study is being conducted across the state of Maharashtra, India. The state was divided into six agroclimatic regions. Using village/ward level population and women's literacy as criteria for stratification, villages and wards were selected, making it possible to cover the study units from all the districts. The representative nature of the sample will make it possible for us to generalize the findings for the entire state of Maharashtra. All the households are selected following a strict stratified sampling procedure to achieve representation of the population.

We would like to mention here that this is a research venture, and we would not be providing any direct service to you. However, we would be giving to each study unit a few information posters carrying messages about health and related issues. We would also be giving a Marathi booklet on women's health to each of the women who will participate in the research. We hope these would be of some use to you and others in the village.

If you have any doubts regarding our study you are welcome to come forward with your queries. The telephone numbers of our institution and two of the researchers who have been associated with CEHAT for a long time are given below. You may contact them in case you need further clarification.

We would appreciate your active participation in the study. It will help make the study more meaningful. Keeping in line with ethical principles of social science research, which we have convictions about, we request you to consent either verbally or in writing to participate in the study.

During your interview, in case you wish to withdraw your participation from the study for any reason, you are entitled to do so. We will respect your right to withdraw midway through interview.

Lastly, we would like to ensure you that the information you share with us would be kept confidential and not be disclosed to anyone under any circumstances. Information collected from around 5000 households would be collated and analysed together. We will ensure that the findings of this study are shared with you eventually in a form that would be useful to you.

Declaration by the research participant

I_____, have received full information about the study, and I hereby give my written/verbal consent to participate in the study*.

Sign/Thumb impression:	Date:	Verbal consent:

Contact telephone numbers: Sunita Bandewar – Tele -Resi; Madhuri Sumant: Tele-Resi; Shelley Saha: Tele Resi

** One copy was given to the Research Participant.*

2 A. HOUSEHOLD MEMBERS: PROFILE

(Note: To begin with, pl. list names of all household members in column 202. Then ask the questions upto column no. 207 in sequence for each family member. Q.208 needs to be asked with reference to all the members together. pl. record the information against appropriate person/s.)

Sr No	Please give us names of the persons who 'usually' live in your household, starting with the head of the household. *Once enlisting of family members is done, pl. use probes (Q. no. 209 to 211) to ensure that the list is complete & exhaustive*	Sex	Relation - ship to the head of the house-hold *	Age *(in completed years)***		Applicable for persons aged 6 years and more			
						Current marital status ***	Number of years of schooling *(● Record completed years of schooling. ● For no schooling record '0' years. ● If a degree holder, pl. record it)*		Could you please tell us if anybody from the list has been married more than once? *(If 'Yes')* Please tell us who they are and number of marriages, including the current one.
201	202	203	204	205		206	207		208
				Before	After*		Standard / Degree	Years	
1)		M / F						.....yrs	
2)		M / F						.....yrs	
3)		M / F						.....yrs	
4)		M / F						.....yrs	
5)		M / F						.....yrs	
6)		M / F						.....yrs	
7)		M / F						.....yrs	
8)		M / F						.....yrs	
9)		M / F						.....yrs	
10)		M / F						.....yrs	
11)	Guests	M / F						.....yrs	
12)	Guests:	M / F						.....yrs	
13)	Guests:	M / F						.....yrs	
14)	Guests:	M / F						.....yrs	
15)	Guests:	M / F						.....yrs	

** For eligible women also record the age as calculated from the women's profile in the 'after' column.*

(Instruction: Pose the following questions to ensure the list of members at the household is completed. Just to make sure that to have a complete listing.)

209	Are there any persons, such as, small children or infants that we have not listed?	Yes	☐ →	Enter each in the above table	No	☐
210	In addition, are there any other people who may not be members of your family, such as domestic servants, lodgers, or friends who **'usually'** live here?	Yes	☐ →	Enter each in the above table	No	☐
211	Do you have any guests or temporary visitors staying here, or anyone else, who stayed here last night?	Yes	☐ →	Enter each in the above table	No	☐

*** Codes for Q. 204** **Relationship to the head of the household**		****Codes for Q. 205** **Age**	*****Codes for Q. 206** **Marital status**
01- Head	09- Brothers-in-law /Sisters-in-law	0- Age less than one year	1- Married
02- Wife or Husband	10- Sisters-in-law	95- Age 95 years or more	2- Widowed
03- Son or Daughter	11- Nieces / Nephews		3- Divorced
04- Son -in-law or Daughter-in-law	12- Other relatives		4- Separated / Deserted
05- Grandchild	13- Adopted/ Fostered child		5- Unmarried
06- Gaurdian	14- Not related		
07- Father-in-law / Mother-in-law	15- Mother / Father		
08- Brother or sister			

6. OCCUPATION AND INCOME OF THE INDIVIDUAL FAMILY MEMBERS IN THE HOUSEHOLD

Now could you please tell us about the occupation and income of each of the household members other than the ones we discussed earlier, such as income from livestock, and household assets.

(Note: Check 202 and those who are 6 years and older, ask the following questions. Instead of writing names in 602, write the sr. no. of the member as recorded in col. 201. Pl. cross check col. 202 to ensure that all members are covered.)

Sr. No	Sr. no as recorded in column no. 201	Is (NAME) engaged in paid work during the last year for 6 months or longer period? *(The work that is paid)*	What is the occupation? (*Main occupation*)*	Monthly salary /wage from main occupation(s) *(No. of working days in the month x wage)*	Subsidiary occupation **	Monthly income/ wage from subsidiary occupation(s) *(No. of working days in the month x wage)*	Pension *(if any)*	*TO BE CALCULATED (Total income by individual: main occupation, subsidiary occupation, pension)* 605+ 607+ 608
601	602	603	604	605	606	607	608	609 A
1		Yes.....1 No.....2 → ***Skip to 606***						
2		Yes.....1 No.....2 → ***Skip to 606***						
3		Yes.....1 No.....2 → ***Skip to 606***						
4		Yes.....1 No.....2 → ***Skip to 606***						
5		Yes.....1 No.....2 → ***Skip to 606***						
						Total Income of all the family members ***(per months / years)***		609 B:

* ***Main occupation:*** *When a person has worked in a particular occupation for atleast 6 months in the year preceding the survey.*

** ***Subsidiary occupation:*** *When a person has worked in a particular occupation for less than 6 months in the year preceding the survey.*

INTERVIEWER'S AND EDITOR'S OBSERVATION

To be recorded by the interviewer after the interview

1. Who all were present during the course of the interview? ***(Record relation with the head of the household)***
2. Gave written consent ☐
3. Gave verbal consent ☐
4. Comments about research participant: _____
5. Comments on specific questions ***(if any):*** _____
6. Any other comments / observations: _____

EDITOR'S OBSERVATIONS / COMMENTS

_____

_____

_____

Name of Editor:_____ Date:_____

SURVEY INSTURMENT - III

WOMAN'S INTERVIEW SCHEDULE

Confidential only for research:
Schedule No.: .....
PSU No.: .....

PREGNANCY OUTCOME: A COMMUNITY BASED STUDY

A household survey undertaken by
Centre for Enquiry into Health and Allied Themes (CEHAT), Pune

WOMAN'S INTERVIEW SCHEDULE: OBSTETRIC HISTORY (WS-IS)

INTERVIEW: VISIT/S MADE AND STATUS							
Visit details	1st Visit	2nd Visit	3rd Visit	4th Visit	5th Visit	Total visit made and time spent	
Date						Total visits made	
Time required for conducting interview						Total time spent	
Name of the woman respondent:							
STATUS OF THE INTERVIEW CONDUCTED: (completed/incomplete/other)							
Interview completed 1							
Interview incomplete 2							
Reasons for incomplete interview:							
Could not meet appropriate respondents after five visits 3							
Refused to participate 4							
Reasons for refusal:							

Interviewer's name:	Signature & date:
Checked in the field by (Name):	Signature & date:

1. IDENTIFICATION OF THE FIELD LOCATION

101	Household No ***(From the house listing):***	
102	Name of Village/Town:	Village/Town code:
103	Name of Taluka:	Taluka code:
104	Name of District:	District code:
105	Name of Region:	Region code:
106	Corporation or Municipal Survey No:	NA ***(in case of rural area)*** 9
107	PSU No.:	

2. PERSONAL INFORMATION
(Religion, Caste, Age, Age of menarche, Marital status, Age at marriage)

Sr No	QUESTIONS	RESPONSES	SKIP TO / INSTRUCTIONS
201	What is your name? ***(write full name)***		
202	Which religion do you belong to? like for Hindu/Muslim/Sikh etc.	Hindu ..... 1 Muslim ..... 2 Sikh ..... 3 Christian ..... 4 Baudh/Navbaudh ..... 5 Jain ..... 6 Don't follow any religion/Don't believe ..... 7 Other ***(specify)*** _____ 8	
203	Which caste do you belong to? ***(Record actual stated caste)***	Don't believe in any caste ..... 7777 Have no caste 8888	
204	***(Pl. record it from the respective household interview schedule. In case married, pl. probe to ensure appropriate of 1/2/3)*** Current marital status:	Married and cohabiting ..... 1 Married but husband stays away ..... 2 Married but *gauna* not performed ..... 3 Widowed ..... 4 Divorced ..... 5 Separated/Deserted 6	
205	Beside household work, are you engaged in any other work?		
206	***(If not gone to school write '0' years. Record qualifications/ degree when stated)*** Can you pl. tell us your educational attainment?	Completed years ☐ Diploma/Graduation/Post graduation	

Sr No	QUESTIONS	RESPONSES	SKIP TO / INSTRUCTIONS
	Section A		
207	Can you please tell me your birth date?	Day/Month/Year ☐☐☐ Can't say .....98 → ***Skip to 207 in 'Section B'***	
208	***(In case of the first marriage)*** Can you please tell us date of your marriage? ***(In case of second marriage)*** While filling up the household schedule..... We collected information if anybody in the family has been married more than once. Accordingly, we are referring here to your first marriage? Can you tell me the date of your first marriage? Or What was your age when you got married for the second time	Day/Month/Year ☐☐☐ → ***Skip to 210 in case of the first marriage*** Year ☐☐	
209	What is the date of your second marriage? Or What was your age when you got married for the second time?	Day/Month/Year ☐☐☐ Year ☐☐	

210	**(Pl. don't ask this question. Calculate it using data from 208 or 209)**	Months ☐☐ →	**Incase of the first marriage and less than nine months skip to 217**
	Incase of the first marriage..... Calculate no. of years of marriage. **(If less than one year record it in months)**	Year ☐☐	
	In case of more than one marriage Pl. calculate no. of years of the current marriage	Months ☐☐	
	(If less than one year record it in months)	Years ☐☐	

After completing section A, please skip to question 215

Sr No	QUESTIONS	RESPONSES	SKIP TO / INSTRUCTIONS
	Section B		
	● ***In case the women is unable to state her age at menarche then consider her age at menarche as 13, and write it in the empty space beside the square/box.***		
207	To arrive at your close-to- correct current age, let us note down some information. At what age did you get your first period /menarche?	Completed years ☐ Can't say 98	
208	Did you attain menarche before marriage?	Yes ..... 1 No ..... 2 →	***Skip to 210***
209	***(If less than 1 year record in months, if less than 1 month record in days)*** When after you attaining menarche/getting your first period, you got married?	Days ☐ Months ☐ Years ☐ →	***Skip to 211***
210	***(If less than 1 year record in months, if less than 1 month record in days)*** When after your marriage did you get your first periods? or When after your marriage did you attain your menarche?	Days ☐ Months ☐ Years ☐	
211	***(In case of single marriage).....*** What is the date of your marriage? ***(in case of second marriage).....*** "While filling up the household schedule..… we collected information if anybody in the family is married more than once. Accordingly, we are referring here to your first marriage". What is the date of your first marriage?	Day / Month / Year ☐☐☐ → Can't say ..... 98 →	***In case of single marriage skip to 214*** ***In case of single marriage skip to 214***
212	What is the date of your second marriage?	Day / Month / Year ☐☐☐ → Can't say 98	***skip to 214***

Sr No	QUESTIONS	RESPONSES	SKIP TO / INSTRUCTIONS
213	When after your first marriage did you marry for the second time? ***(If less than 1 year record in months)***	Months ☐ Years ☐	
	If the research participant is able to answer 211 and/ or 212, then do the needful calculations to arrive at answer for 214. Otherwise please ask her the following information.		
214	***If married only once....*** Since how long are you married? ***(If less than 1 year record in months)*** ***If married more than once.....*** Since how long are you married as regards the current marriage? ***(If less than 1 year record in months)***	Months ☐ Years ☐ Months ☐ Years ☐	***In case of single marriage and less than 9 months, skip to 217***

Section B completed

Please check 204. In case gauna not performed, please end the interview

215	How many sons do you have?	Number of sons ☐	
216	How many daughters do you have?	Number of daughters ☐	***In case answer to 215 & 216 is '0', only then ask 217, otherwise skip to 218***
217	Have you ever become pregnant?	Yes ..... 1 No ..... 2 Currently pregnant 3	**(END OF THE INTERVIEW)**

- ***Pl. carry out the needful calculations to arrive at woman's age at her first marriage.***
  - *Pl. subtract the answer of 208 from 207 from Section A.*

Or

- *In case, she attained menarche before marriage pl. add, answers of 207 to 208 from section B.*

Or

- *In case, she attained menarche after marriage subtract the answer 210 from 207 from section B.*

218 **Age of the woman at her first marriage:** in completed years ☐

- ***Pl. carry out the needful calculations to arrive at the woman's age at second marriage.***
  - *Pl. record it by subtracting the answer of 207 from 209 from Section A.*

Or

- *Pl. record it by referring to the information from 212 from section B.*
- *Pl. record it by adding the answers of 218 and 213 from section A.*

219 **Age of the woman at second marriage:** in completed years ☐

- ***Pl. do the needful calculations to arrive at the woman's current age.***
  - *Pl. record it by subtracting the answer of 207 (Section A) from year 2001.*
  - *Pl. record it by adding the answer of 214 and 218 or 219 from section B.*

220 **Current age:** in completed years ☐

If the current age of the woman is less than 15 and more than 54, pl. end the interview here.

Sr No	QUESTIONS	RESPONSES	SKIP TO / INSTRUCTIONS
316	Did you ever become pregnant after you underwent family planning operation?	Yes..... 1 → *Pl. record details of it in "Section 3" unless already recorded.* No 2	
	Note: if the woman had undergone D & C procedure for the management of spontaneous abortion or for conducting induced abortion, *only then* in question 317 the word *'besides this'* should be used.		
317	***(Besides the D & Cs that you have already mentioned)*** have you undergone D & C procedures?	Yes ..... 1 No ..... 2 → ***Skip to 323***	
318	How many times did you undergo D & C procedures?	☐ times	

Sr No of D&C	Between which two pregnancies did you do this D & C?	Why was the D &C done? *(Pl. record all the reasons stated)*	When *(no. of days)* after you missed your periods, did you undergo D &C operation / procedure? *(Pl. record in days)*
319	**320**	**321**	**322**
First		Became pregnant ..... A Incomplete abortion ..... B Missed periods ..... C Gynaecolgical problem ..... D Not conceiving..... E → ***Skip to 323*** Other ***(specify)*** _____ F	
Second		Became pregnant ..... A Incomplete abortion ..... B Missed periods ..... C Gynaecolgical problem ..... D Not conceiving..... E → ***Skip to 323*** Other ***(specify)*** _____ F	
Third		Became pregnant ..... A Incomplete abortion ..... B Missed periods ..... C Gynaecolgical problem ..... D Not conceiving..... E → ***Skip to 323*** Other ***(specify)*** _____ F	

If the reasons for D & C are either A, B, or C then pl. check whether she has already stated that in Section 3. In case if she has not, pl. record it in Section 3.

Note: record carefully the following information before leaving the particular house.

Record dates of all live birth / still births / spontaneous abortion and induced abortion those occurred since Jan 1996.				
Sr. no of live/still birth/ abortion during the reference period *(Jan 1996 onwards)*	**Date of Live Birth**	**Date of Still Birth**	**Date of Spontaneous Abortion**	**Date of Induced Abortion**
323	**324**	**325**	**326**	**327**
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				

INFORMATION ABOUT TOTAL PREGNANCY OUTCOMES **Fill up the following using the information from 302 & 313**				
	Total no. of live birth/s	**Total no. of still birth/s**	**Total no. of spontaneous abortion/s**	**Total no. of induced abortion/s**
328	**329**	**330**	**331**	**332**
During lifetime excluding reference period ***(before Jan 1996)***				
During the reference period ***(since Jan 1996)***				
Total no. of conceptions				

THE END

3. OBSTETRIC HISTORY

(Note: ● In case, the pregnancy outcome is not a 'live birth' then take note of the following things.
• In these situation, if the length of the gestation is or less 7 months, record the pregnancy outcome as a spontaneous abortion or else, that is if length of gestation is more than 7 month, then pl. record it as a still birth.
• It is essential that for each of the pregnancy, the entire data are recorded as per the table below.)

Preg. no.	What was the outcome of your first pregnancy?	In which month of pregnancy did you deliver/ abort / aborted?	When after your (first /second) marriage did this it got _____ happen?	Whether it was a girl or a boy?	What is the name of the child?	How old is (NAME) now?	How old was s/he when died?	Where did you deliver?	What is the prime reason for not going to a health care facility?	Did you use any contraception including natural method after this pregnancy?	Record after Calculating: Age at delivery/ abortion: (218 / 219 + 304)	Record after Calculating: Calendar year of delivery / abortion
301	302	303	304	305	306	307	308	309	310	311	312A	313
1	Live birth .... 1 Still birth ..... 2 Spontaneous abortion ..... 3 Induced abortion 4	_____ Months	_____ Months _____ Year ***In case the response to 302 is code 3/4 then skip to 311***	**In case of . 'live birth'** Male ..... 1 Female .. 2 **In case of . 'still birth'** Male.....1 Female..2 ***Skip to 309***		Alive ...1 _____ Days _____ Months _____ Years ***Skip to 309*** Dead...2	_____ Hours _____ Days Months _____ Years	Home.....1 **Health care** Government .2 Private..... 3 Other ***(specify)***..... 4 ***Skip to 311***	Not necessary ..... A Not customary ..... B Costs too much ..... C Too far/ No transport D Poor quality services ..... E Did not have adequate time to reach ..... F Family did not allow . G Better care at home .. H Lack of adequate knowledge ..... I Other ***(specify) .....*** J	Yes ..... 1 No ..... 2 Tubectomy/ vasectomy 3		
314	Did you undergo sonography when you were pregnant?					Yes ..... 1 No ..... 2 →	***(Ask according to the directions given below in the box).***					
315	Why did you go for sonography? ***(pl. record details)***						***(In case the reason for sonography is sex identification then go to Section 10)***					

- ***Pl. ask 317 after the last pregnancy. Take note that the first pregnancy can also be the last pregnancy.***
- ***In case of 'live birth', pl. ask about the next pregnancy.***
- ***In case of pregnancy outcome since January 1996:***
  - ***if 'still birth' or 'spontaneous abortion' go to Section 4 (Page no. xxxix)***
  - ***if 'induced abortion' go to Section 7 (Page no. xxxxviii)***
- ***In case of pregnancy outcome before January 1996:***
  - ***if 'still birth' or 'spontaneous abortion' go to Section 6 (Page no. xxxxvii)***
  - ***if 'induced abortion' go to Section 9 (Page no. xxxxviii)***

(Note: • In case, the pregnancy outcome is not a 'live birth' then take note of the following things

• In these situation, if the length of the gestation is or less 7 months, record the pregnancy outcome as a spontaneous abortion or else, that is if length of gestation is more than 7 month, then pl. record it as a still birth.

• It is essential that for each of the pregnancy, the entire data are recorded as per the table below.)

Preg. no.	After this___, when you became pregnant, what was the outcome?	In which month of pregnancy did you deliver/ abort / aborted?	When after your last pregnancy did this _____ happen?	Whether it was a girl or a boy?	What is the name of the child?	How old is (NAME) now?	How old was s/he when died?	Where did you deliver?	What is the prime reason for not going to a health care facility?	Did you use any contraception including natural method after this pregnancy?	Record after Calculating	
											Age at delivery/ abortion: (312A / 304)	Calendar year of delivery / abortion
301	**302**	**303**	**304**	**305**	**306**	**307**	**308**	**309**	**310**	**311**	**312A**	**313**
2	Live birth .... 1 Still birth ..... 2 Spontaneous abortion ..... 3 Induced abortion ..... 4 Currently pregnant...5 ***Skip to 317*** ←	_____ Months	_____ Months _____ Year ***In case the response to 302 is code 3/4 then skip to 311***	**In case of . 'live birth'** Male ..... 1 Female .. 2 **In case of . 'still birth'** Male.....1 Female..2 ***Skip to 309*** ←		Alive ...1 _____ Days _____ Months _____ Years ***Skip to 309*** ← Dead...2	_____ Hours _____ Days Months _____ Years	Home.....1 **Health care** Government .2 Private..... 3 Other ***(specify)***..... 4 ***Skip to 311*** ←	Not necessary ..... A Not customary ..... B Costs too much ..... C Too far/ No transport D Poor quality services ..... E Did not have adequate time to reach ..... F Family did not allow . G Better care at home .. H Lack of adequate knowledge ..... I Other ***(specify)*** ..... J	Yes ..... 1 No ..... 2 Tubectomy/ vasectomy 3		
314	Did you undergo sonography when you were pregnant?					Yes ..... 1 No ..... 2 → ***(Ask according to the directions given below in the box).***						
315	Why did you go for sonography? ***(pl. record details)***							***(In case the reason for sonography is sex identification then go to Section 10)***				

- ***Pl. ask 317 after the last pregnancy. Take note that the first pregnancy can also be the last pregnancy.***
- ***In case of 'live birth', pl. ask about the next pregnancy.***
- ***In case of pregnancy outcome since January 1996:***
  - ***if 'still birth' or 'spontaneous abortion' go to Section 4 (Page no. xxxix)***
  - ***if 'induced abortion' go to Section 7 (Page no. xxxxviii)***
- ***In case of pregnancy outcome before January 1996:***
  - ***if 'still birth' or 'spontaneous abortion' go to Section 6 (Page no. xxxxvii)***
  - ***if 'induced abortion' go to Section 9 (Page no. xxxxviii)***

4. SPONTANEOUS ABORTION AND STILL BIRTH/S DURING REFERENCE PERIOD (SINCE JAN 1996)

(Note: ● In this section, we are going to collect information about all spontaneous abortion/s and still birth/s those occurred during the last 5 years.
● For each of the spontaneous abortion and still birth, detailed information as below is going to be collected.
● In case of more than one spontaneous abortion /still birth during the reference period pl. add extra sheets.)

Pregnancy no._____

Sr. no. of spont. abn. /still birth	*(● Woman will be offered the set of cards carrying a range of abortion service provider & will be requested to pick up the ones to whom she had approached for managing spont. abortion / still birth.* *● pl. note the providers from these cards in col. 402 in the same sequence that they were approached.* *● pl. pose the questions for each of the provider mentioned in a horizontal manner from 403 onwards.)* **Tell us the people whom you approached for managing this miscarriage / still birth? In case you had to approach more than one persons, pl. maintain the same sequence that you approached them.**	**What was the nature of treatment given?** *(Write in verbatim the treatment given. Ask whether D & C was done)*	**How did you travel to the (NAME) provider and back?** *(Mode of transport used)*	**How much time did it take to reach there?**	**Pl. record the total distance travelled** *(To be calculated) (in kms)*
401	**402**	**403**	**404**	**405**	**406**
	A)		Going: Coming:		
	B)		Going: Coming:		
	C)		Going: Coming:		
	D)		Going: Coming:		
	E) Did not take treatment ☐ → *Skip to 417 in case of no treatment sought*				

(Note: ● In this section, we are going to collect information about all spontaneous abortion/s and still birth/s those occurred during the last 5 years.
● For each of the spontaneous abortion and still birth, detailed information as below is going to be collected.
● In case of more than one spontaneous abortion /still birth during the reference period pl. add extra sheets.)

Pregnancy no._____

Sr. no. of spont. abn. / still birth	**Who all (NAME) accompanied you when you went to the provider and returned?**	**How long you stayed there?** *(days / nights)*	**Cost of management of spontaneous abortion / still birth (in Rs.)**					
			Travel cost (per person to and fro) *(Pl. record also the number of visits)*	**Hospital fees** *(fees of the service provider etc)*	**Other cost** *(medicines, tests)*	**Cost of blood transfusion** *(if any)*	**Lodging & boarding cost**	**TOTAL COST*** *(To be calculated)*
401	**407**	**408**	**409**	**410**	**411**	**412**	**413**	**414**
	Going: Coming:						Food: Stay:	Actual: Approx.:
	Going: Coming:						Food: Stay:	Actual: Approx.:
	Going: Coming:						Food: Stay:	Actual: Approx.:
	Going: Coming:						Food: Stay:	Actual: Approx.:

***Add 409, 410, 411, 412, 413. In case the woman is unable to state the costs separately, then pl. record approximate total cost.**

XXXX

Sr. no. of spont. abn. / still birth	Direct cost	Indirect cost				
	How did you meet the expenses incurred due to miscarriage /still birth? *(Pl record all the stated alternatives)*	How many working days did you loose due to this miscarriage/still birth?	How much wage did you loose?	419 Were other members of your family able to go to work due to this miscarriage/still birth? Yes.....1 → *Skip to 424* No.....2		
				Who all from your family were not able to go to work?	How many days was s/he unable to go to work?	How much wage did s/he loose?
415	416	417	418	420	421	422
1	Own house ..... A Natal house ..... B From relatives ..... C Borrowed from relatives ..... D Borrowed from moneylender ..... E Other *(specify)* ..... F NA ..... Z	_____Days / Months NA (if the woman is not engaged in any economic activity) ..... 99 *Skip to 419*	Rs/- _____	1) 2) 3)	_____Days _____Days _____Days	Rs./-_____ Rs./-_____ Rs./-_____
2	Own house ..... A Natal house ..... B From relatives ..... C Borrowed from relatives ..... D Borrowed from moneylender ..... E Other *(specify)* ..... F NA ..... Z	_____Days / Months NA (if the woman is not engaged in any economic activity) ..... 99 *Skip to 419*	Rs/- _____	1) 2) 3)	_____Days _____Days _____Days	Rs./-_____ Rs./-_____ Rs./-_____
3	Own house ..... A Natal house ..... B From relatives ..... C Borrowed from relatives ..... D Borrowed from moneylender ..... E Other *(specify)* ..... F NA ..... Z	_____Days / Months NA (if the woman is not engaged in any economic activity) ..... 99 *Skip to 419*	Rs/- _____	1) 2) 3)	_____Days _____Days _____Days	Rs./-_____ Rs./-_____ Rs./-_____

Note: If treatment not sought, (pl. don't ask 424 to 426) skip to 428

Sr. no. of spont. abn. / still birth	*(● Write in verbatim why the woman chose this particular provider (For each provider write separately) ● While asking the woman, give her the reference of the service provider that you are talking about.)* **For managing this miscarriage /still birth why did you choose this particular service provider / health care facility.**	*(Applicable only when the woman had approached more than one health care provider.)* **After how many hours/days did you approach _____ this health care provider?**	*(● Ask only if informal health care provider is/was/were approached, else skip to 428)* **Can you now tell me, whether you had any problem after you sought care from this _____health care provider?**
423	**424**	**425**	**426**
1	Provider 1: Provider 2: Provider 3:	Not applicable in case only one service provider/facility was approached .....9 _____ Hours/Days _____ Hours/Days	
2	Provider 1: Provider 2: Provider 3:	Not applicable in case only one service provider/facility was approached .....9 _____ Hours/Days _____ Hours/Days	
3	Provider 1: Provider 2: Provider 3:	Not applicable in case only one service provider/facility was approached .....9 _____ Hours/Days _____ Hours/Days	

Workload and Family / Social support						
Sr. no. of spont. abn. / still birth	***(Pl. record verbatim)*** **During this pregnancy, what was your daily routine? Or Can you please tell me your work schedule of one single average day?**	**After you came to know about your pregnancy, was your workload the same, reduced or increased?**	**Did you go to your natal home or any other place immediately (within 8 days) for rest after this miscarriage / still birth?**	**Did you get complete rest from the household / domestic work after this miscarriage / still birth?**	**For how many days did you get such complete rest from domestic work?**	**Who shared your domestic workload?** ***(pl. record all responses stated)***
427	**428**	**429**	**430**	**431**	**432**	**433**
1	Household chores:_____ Work other than household chores: _____ _____	More than usual ..... 1 Usual ..... 2 Less than usual 3	Yes ..... 1 _____ Day No 2	Yes..... 1 To some extent ..... 2 No ..... 3 ***Skip to 437***	_____ Days / Months	Women from in-laws family ..... A Women from natal home ..... B Other relatives (female) ..... C Men from in-laws family ..... D Friends ..... E Other ***(specify)*** _____ F
2	Household chores:_____ Work other than household chores: _____ _____	More than usual ..... 1 Usual ..... 2 Less than usual 3	Yes ..... 1 _____ Day	Yes..... 1 To some extent ..... 2 No ..... 3 ***Skip to 437***	_____ Days / Months	Women from in-laws family ..... A Women from natal home ..... B Other relatives (female) ..... C Men from in-laws family ..... D Friends ..... E Other ***(specify)*** _____ F
3	Household chores:_____ Work other than household chores: _____ _____	More than usual..... 1 Usual ..... 2 Less than usual 3	Yes..... 1 _____ Day No 2	Yes ..... 1 To some extent ..... 2 No ..... 3 ***Skip to 437***	_____ Days / Months	Women from in-laws family ..... A Women from natal home ..... B Other relatives (female) ..... C Men from in-laws family ..... D Friends ..... E Other ***(specify)*** _____ F

Sr. no. of spont. abn. / still birth	For which of the domestic work they took the responsibility? *(pl. record all the work stated)*	*(Ask 436 only if any of her child is less than 10 years, otherwise skip to 438.)* Who looked after your children? *(pl. record all responses stated)*	Why were you not able to take off from household work?	*(Note: In case the woman is unable to follow/ understand the question, then read out the following alternatives excluding the alternatives A, F and G)* According to you what was the reason for this miscarriage / still birth?
434	435	436	437	438
1		Self ..... A Women from your in-laws family ..... B Women from your natal family ..... C Other women relatives ..... D Men from your in-laws family ..... E Friends ..... F Other ***(specify)*** ..... G NA ..... Z	Help not available ..... 1 Help available, but I did not feel the need ..... 2 Other ***(specify)*** 3	Due to workload..... A Fell down..... B Ate papaya..... C Habitual ..... D Hereditary ..... E Mental cause/ tension ..... F Superstition (Black magic)..... G Iatrogenic cause (Medicine/Medical treatment)..... H Other ***(specify)*** _____ I Don't know..... Y
2		Self ..... A Women from your in-laws family ..... B Women from your natal family ..... C Other women relatives ..... D Men from your in-laws family ..... E Friends ..... F Other ***(specify)*** ..... G NA ..... Z	Help not available ..... 1 Help available, but I did not feel the need ..... 2 Other ***(specify)*** 3	Due to workload..... A Fell down..... B Ate papaya..... C Habitual ..... D Hereditary ..... E Mental cause/ tension ..... F Superstition (Black magic)..... G Iatrogenic cause (Medicine/Medical treatment)..... H Other ***(specify)*** _____ I Don't know..... Y
3		Self ..... A Women from your in-laws family ..... B Women from your natal family ..... C Other women relatives ..... D Men from your in-laws family ..... E Friends ..... F Other ***(specify)*** ..... G NA ..... Z	Help not available ..... 1 Help available, but I did not feel the need ..... 2 Other ***(specify)*** 3	Due to workload..... A Fell down..... B Ate papaya..... C Habitual ..... D Hereditary ..... E Mental cause/ tension ..... F Superstition (Black magic)..... G Iatrogenic cause (Medicine/Medical treatment)..... H Other ***(specify)*** _____ I Don't know..... Y

ASK SECTION 5

5. SPONTANEOUS ABORTION / STILL BIRTH: PERCEIVED ABORTION MORBIDITY / COMPLICATIONS (SINCE JAN 1996)

Note : ● To begin with, the woman will be requested to elicit/report the complications she had after this miscarriage/still birth. Pl. record them in col. 502.

• After she reports the complications she had, give her the morbidity cards. Ask her if she had any of the complications listed in the cards, tell her to keep the cards aside. Then note / record the complications in col. 502.

• After recording the complication stated by the woman, ask her about the "treatment sought for the stated complications" in ***pg xxxxvi***

Did you have any complications within 6 months of your miscarriage / still birth?

Pregnancy No.___

Sr. no. of spont. abn. / still birth	Symp-toms	Complications within 2 hours of your miscarriage / still birth		Complications after 2 hours and within 24 hours of your miscarriage / still birth		Complications after 24 hours and within 8 days of your miscarriage / still birth		Complications after 8 days and within 3 weeks of your miscarriage / still birth		Complications after 3 weeks and within 6 weeks of your miscarriage / still birth		Complications after 6 weeks of your miscarriage / still birth		Permanent complications after your miscarriage / still birth	
		Without probe	*With probe*	*Without probe*	*With probe*	*Without probe*	*With probe*	*Without probe*	*With probe*	*Without probe*	*With probe*	*Without probe*	*With probe*	*Without probe*	*With probe*
501	502	503	504	505	506	507	508	509	510	511	512	513	514	515	516

Treatment Sought for Abortion Complications

Sr. no. of spont. abn. / still birth	The symptoms as recorded in column 502	Did you seek any treatment for this?	Why did you not seek any treatment?	How many days after this problem started did you seek treatment?	Did you go to the same person for this treatment who managed your miscarriage/still birth? If 'no' to whom did you go for the treatment?	What was the treatment given?	How long (no. of days) did you take this treatment?	Did you get relief by taking this treatment?	How many days after your problem started did you get relief?
517	518	519	520	521	522	523	524	525	526
		Yes ..... 1 ↓ *(Skip to 521)* No 2	*Skip to 526*					Yes ..... 1 No 2	
		Yes ..... 1 ↓ *(Skip to 521)* No 2	*Skip to 526*					Yes ..... 1 No. 2	
		Yes ..... 1 ↓ *(Skip to 521)* No 2	*Skip to 526*					Yes ..... 1 No 2	
		Yes ..... 1 ↓ *(Skip to 521)* No 2	*Skip to 526*					Yes ..... 1 No 2	
		Yes ..... 1 ↓ *(Skip to 521)* No 2	*Skip to 526*					Yes ..... 1 No 2	

Add extra sheets as per need

After the last column skip to 302 (regarding her next pregnancy)

6. SPONTANEOUS ABORTION/S AND STILL BIRTH/S : LIFE TIME (BEFORE JAN 1996)

Note: In this section pl. record information regarding spontaneous abortion/s and still birth/s that occurred before Jan 1996.

Pregnancy no. _____

Sr. no. of spont. abn. /still birth	*(Note: In case the woman is unable to follow / understand the question, then read out the following alternatives excluding the ones stated in A, F and G)* **According to you what was the reason for this miscarriage /still birth?**	Did you seek any medical help to manage this miscarriage / still birth or your managed it on your own?	After you had this miscarriage / still birth, did the doctor advise you to adopt / practice any contraceptive method?	How much did you spend to manage this miscarriage / still birth?
601	602	603	604	605
1	Due to workload ..... A Fell down ..... B Ate papaya ..... C Habitual ..... D Hereditary ..... E Mental tension /stress ..... F Superstition (Black magic) ..... G Itrogenic cause (Medicine / Medical treatment) ..... H Other ***(specify)***_____ I Don't know ..... Y	Sought medical help ..... 1 Did not seek medical help ..... 2 ***Skip to 605*** Did not feel the need to seek medical help.....3 ***Skip to 302***	Yes ..... 1 No ..... 2 Don't remember 8	Rs./_____
2	Due to workload ..... A Fell down ..... B Ate papaya ..... C Habitual ..... D Hereditary ..... E Mental tension /stress ..... F Superstition (Black magic) ..... G Itrogenic cause (Medicine / Medical treatment) ..... H Other ***(specify)***_____ I Don't know ..... Y	Sought medical help ..... 1 Did not seek medical help ..... 2 ***Skip to 605*** Did not feel the need to seek medical help.....3 ***Skip to 302***	Yes ..... 1 No ..... 2 Don't remember 8	Rs./_____
3	Due to workload ..... A Fell down ..... B Ate papaya ..... C Habitual ..... D Hereditary ..... E Mental tension /stress ..... F Superstition (Black magic) ..... G Itrogenic cause (Medicine / Medical treatment) ..... H Other ***(specify)***_____ I Don't know ..... Y	Sought medical help ..... 1 Did not seek medical help ..... 2 ***Skip to 605*** Did not feel the need to seek medical help.....3 ***Skip to 302***	Yes ..... 1 No ..... 2 Don't remember 8	Rs./_____

Add extra sheets as per need

Go to next pregnancy i.e. column no. 302

7. INDUCED ABORTION/S: REFERENCE PERIOD (SINCE JAN 1996)

(Note: • In this section, we are going to collect information about induced abortion those occurred during the last 5 years.
• For each of the induced abortion, detailed information as below is going to be collected.
• In case of more than one induced abortion during the reference period pl. add extra sheets.)

Pregnancy no._____

Sr. no. of ind. abn.	• *Woman will be offered the set of cards carrying a range of abortion* service provider & will be requested to pick up the ones to whom she had approached for managing the induced abortion. • *pl. note the providers from these cards in col. 702 in the same sequence that they were approached.* • *pl. pose the questions for each of the provider mentioned in a horizontal manner from 703 onwards.* **Tell us the people whom you approached for managing this induced abortion?** **In case you had to approach more than one persons, pl. maintain the same sequence that you approached them.**	**What was the nature of treatment given?** *(Write in verbatim the treatment given. Ask whether D & C was done)*	**How did you travel to the (NAME) provider and back?** *(mode of transport used)*	**How much time did it take to reach there?**	**Pl. record the total distance travelled** *(To be calculated) (in kms)*
701	**702**	**703**	**704**	**705**	**706**
	A)		Going: Coming:		
	B)		Going: Coming:		
	C)		Going: Coming:		
	D)		Going: Coming:		

Sr. no. of ind. abn.	Who all (NAME) accompanied you when you went to the provider and returned?	How long you stayed there? *(days/ nights)*	Cost of management of induced abortion (in Rs.)					
			Travel cost *(per person to and fro) (Pl. record also the number of visits)*	Hospital fees *(fees of the service provider etc.)*	Other cost *(medicines, tests)*	Cost of blood transfusion *(if any)*	Lodging & boarding cost	TOTAL COST* *(To be calculated)*
701	707	708	709	710	711	712	713	714
	Going: Coming:						Food: Stay:	Actual: Approx:
	Going: Coming:						Food: Stay:	Actual: Approx:
	Going: Coming:						Food: Stay:	Actual: Approx:
	Going: Coming:						Food: Stay:	Actual: Approx:

***Add 709, 710, 711, 712, 713. In case the woman is unable to state the costs separately, then pl. record approximate total cost.**

Sr. no. of ind. abn.	Direct cost	Indirect cost				
	How did you meet the expenses incurred due to this induced abortion *(PI record all the stated alternatives)*	How many days that you couldn't not go to work due to this induced abortion?	How much wage did you loose?	719 Were other member of your family able to go to work due to this induced abortion? Yes.....1 → *Skip to 724* No.....2		
				Who all from your family were not able to go to work?	How many days was s/he not able to go to work?	How much wage did s/he loose?
715	716	717	718	720	721	722
1	Own house ..... A Natal house ..... B From relatives ..... C Borrowed from relatives ..... D Borrowed from moneylender ..... E Other *(specify)*_____ F NA ..... Z	_____Days/Months NA (if the woman is not engaged in any economic activity)..... 99 → *Skip to 719*	Rs/- _____	1) 2) 3)	_____Days _____Days _____Days	Rs./-_____ Rs./-_____ Rs./-_____
2	Own house ..... A Natal house ..... B From relatives ..... C Borrowed from relatives ..... D Borrowed from moneylender ..... E Other *(specify)*_____ F NA ..... Z	_____Days/Months NA (if the woman is not engaged in any economic activity)..... 99 → *Skip to 719*	Rs/- _____	1) 2) 3)	_____Days _____Days _____Days	Rs./-_____ Rs./-_____ Rs./-_____
3	Own house ..... A Natal house ..... B From relatives ..... C Borrowed from relatives ..... D Borrowed from moneylender ..... E Other *(specify)*_____ F NA ..... Z	_____Days/Months NA (if the woman is not engaged in any economic activity)..... 99 → *Skip to 719*	Rs/- _____	1) 2) 3)	_____Days _____Days _____Days	Rs./-_____ Rs./-_____ Rs./-_____

XXXXX

Sr. no. of ind. abn.	*Note : • Write in verbatim, reasons for which the woman chose this particular abortion provider/s. (write separately for each provider)* *• While asking the woman, give her the reference about the abortion provider you are talking about. And the same should be done while recording it.* **Why did you choose only this particular provider/s or hospital for getting this abortion done?**	*Applicable only when the woman had approached more than one health care provider for getting an abortion done* **When (hours / days) after returning from (name of the provider) you approached (name of the providers)?**	*• Ask only in cases where informal health care providers was/were approached for abortion care.* *Otherwise skip to 728* **Can you now tell me, whether youhad any problem after you returnedfrom (name of the health care provider)?**
723	**724**	**725**	**726**
1	Provider 1: Provider 2: Provider 3:	Not applicable for single abortion provider.....9 _____ Hours/Days _____ Hours/Days	
2	Provider 1: Provider 2: Provider 3:	Not applicable for single abortion provider.....9 _____ Hours/Days _____ Hours/Days	
3	Provider 1: Provider 2: Provider 3:	Not applicable for single abortion provider.....9 _____ Hours/Days _____ Hours/Days	

Sr. no.of ind. abn.	What were the reasons for undergoing this abortion?	Decision making	
		Who all in your family knew about this abortion?	Who all participated in the decision making regarding undergoing this abortion?
727	728	729	730
1	Unplanned pregnancy ..... A Unwanted pregnancy ..... B Contraceptive failure ..... C Last child was small ..... D Family problem ..... E Economic problem ..... F As per medical advice because of inadequate/fetal growth or physical handicap detected ..... G As per medical advice because mother's life was at stake .. H Education/carrier was getting affected ..... I Family did not want this child ..... J Other *(specify)*_____ K Unwanted sex of the foetus ..... L ***Skip to section 10 (page no. xxxxxix)***	Husband ..... A Relatives from in–laws family ..... B Relatives from natal family ..... C No one knew ..... D Other *(specify)*_____E	Self ..... A Husband ..... B Relatives from in–laws family ..... C Relatives from natal family ..... D No one knew ..... E Other *(specify)*_____F
2	Unplanned pregnanc ..... A Unwanted pregnanc ..... B Contraceptive failur ..... C Last child was smal ..... D Family problem ..... E Economic problem ..... F As per medical advice because of inadequate/fetal growth or physical handicap detected ..... G As per medical advice because mother's life was at stake .. H Education/carrier was getting affected ..... I Family did not want this child ..... J Other *(specify)*_____ K Unwanted sex of the foetus ..... L ***Skip to section 10 (page no. xxxxxix)***	Husband ..... A Relatives from in–laws family ..... B Relatives from natal family ..... C No one knew ..... D Other *(specify)*_____E	Self ..... A Husband ..... B Relatives from in–laws family ..... C Relatives from natal family ..... D No one knew ..... E Other *(specify)*_____F

Add extra sheets as per need

Workload and Family / Social support						
Sr. no. of Ind. abn.	**Immediately after you had this abortion did you go to your natal home? (generally within 8 days) If Yes, for how many days did you go?**	**Did you get complete off from your household chores after you had this abortion?**	**For how many days did you get complete off from the household chores?**	**Who shouldered the responsibility of your household chores?** *(Pl. record all responses stated)*	**Which of the workload of yours was shared by them?** *(Pl. record all the work stated)*	***Ask 737 only if any of her child is around 10 years, otherwise skip to 739.*** **Who looked after your children?** *(Pl. record all responses stated)*
731	**732**	**733**	**734**	**735**	**736**	**737**
1	Yes ..... 1 _____ Day No 2	Yes ..... 1 To some extent .... 2 No ..... 3 ***Skip to 739***	_____ Days	Women from in-laws family ..... A Women from natal home ..... B Other relatives (Female) ..... C Men from in-laws family ..... D Friends (Men/Women) ..... E Other ***(specify)*** _____ F		Self ..... A Women from your in-laws family .. B Women from your natal family ..... C Other women relatives ..... D Men from your in-laws family ..... E Friends (Women) ..... F Other ***(specify)*** _____ F NA ..... Z
2	Yes ..... 1 _____ Day No 2	Yes ..... 1 To some extent .... 2 No ..... 3 ***Skip to 739***	_____ Days	Women from in-laws family ..... A Women from natal home ..... B Other relatives (Female) ..... C Men from in-laws family ..... D Friends (Men/Women) ..... E Other ***(specify)*** _____ F		Self ..... A Women from your in-laws family .. B Women from your natal family ..... C Other women relatives ..... D Men from your in-laws family ..... E Friends (Women) ..... F Other ***(specify)*** _____ F NA ..... Z
3	Yes ..... 1 _____ Day No 2	Yes ..... 1 To some extent .... 2 No ..... 3 ***Skip to 739***	_____ Days	Women from in-laws family ..... A Women from natal home ..... B Other relatives (Female) ..... C Men from in-laws family ..... D Friends (Men/Women) ..... E Other ***(specify)*** _____ F		Self ..... A Women from your in-laws family .. B Women from your natal family ..... C Other women relatives ..... D Men from your in-laws family ..... E Friends (Women) ..... F Other ***(specify)*** _____ F NA ..... Z

Note: Ask 740 to 746 only if the abortion care was sought from a health care facility (hospital), other wise skip to Section 8.

		Quality of abortion care: Women's perspective Now we would like to know your opinion about the quality of abortion care that you received.		
Sr. no. of ind. Abn.	**Why were you not able to keep away from household work?**	**Did the abortion service provider demand consent of your husband while providing you abortion care?**	**What all precautions did the provider ask you to take post-procedure?**	**Did the provider ask you to make follow-up visit?**
738	**739**	**740**	**741**	**742**
1	Help not available ..... 1 Help available, but I did not feel the need ..... 2 Other ***(specify)*** _____ 3	Yes ..... 1 No ..... 2 Don't know 8	Take rest ..... A Not to do heavy work ..... B Sexual abstinence ..... C Other ***(specify)*** _____ D Did not say anything ..... E	Yes ..... 1 If yes, how many days after your abortion you went for a followup visit? _____ Days No 2
2	Help not available ..... 1 Help available, but I did not feel the need ..... 2 Other ***(specify)*** _____ 3	Yes ..... 1 No ..... 2 Don't know 8	Take rest ..... A Not to do heavy work ..... B Sexual abstinence ..... C Other ***(specify)*** _____ D Did not say anything ..... E	Yes ..... 1 If yes, how many days after your abortion you went for a followup visit? _____ Days No 2
3	Help not available ..... 1 Help available, but I did not feel the need ..... 2 Other ***(specify)*** _____ 3	Yes ..... 1 No ..... 2 Don't know 8	Take rest ..... A Not to do heavy work ..... B Sexual abstinence ..... C Other ***(specify)*** _____ D Did not say anything ..... E	Yes ..... 1 If yes, how many days after your abortion you went for a followup visit? _____ Days No 2

Sr. no. of ind. abn.	Were you advised for contraception post-procedure?	What method of contraception was advised?	Was your accepting contraceptive method, a precondition for providing abortion care services by the service provider?
743	744	745	746
1	Yes ..... 1 No ..... 2 ***Skip to section 8*** ←	Contraceptive pills ..... A Cu T / IUD ..... B Condom / Nirodh ..... C Rhythm / Safe periodic ..... D Sexual abstinence ..... E Sterilisation ..... F Withdrawal ..... G Other ***(specify)*** _____ H	Yes ..... 1 No 2
2	Yes ..... 1 No ..... 2 ***Skip to section 8*** ←	Contraceptive pills ..... A Cu T / IUD ..... B Condom / Nirodh ..... C Rhythm / Safe periodic ..... D Sexual abstinence ..... E Sterilisation ..... F Withdrawal ..... G Other ***(specify)*** _____ H	Yes ..... 1 No 2
3	Yes ..... 1 No ..... 2 ***Skip to section 8*** ←	Contraceptive pills ..... A Cu T / IUD ..... B Condom / Nirodh ..... C Rhythm / Safe periodic ..... D Sexual abstinence ..... E Sterilisation ..... F Withdrawal ..... G Other ***(specify)*** _____ H	Yes ..... 1 No 2

GO TO SECTION 8 ←

XXXXXV

8. INDUCED ABORTION: PERCEIVED ABORTION MORBIDITY/COMPLICATIONS (SINCE JAN 1996)

Note: • To begin with, the woman will be requested to elicit/report the complications she had after this induced abortion. Pl. record them in col. 802.
• After she reports the complications she had, give her the morbidity cards. Ask her if she had any of the complications listed in the cards, tell her to keep the cards aside. Then note/ record the complications in col. 802.
• After recording the complication stated by the woman, ask her about the treatment sought for the stated complications in pg **xxxxxvii**

Did you have any complications within 6 months of your induced abortion?

Pregnancy No.___

Sr. no. of. ind. abn.	Symp -toms	Complications within 2 hours of your induced abortion		Complications after 2 hours and within 24 hours of your induced abortion		Complications after 24 hours and within 8 days of your induced abortion		Complications after 8 days and within 3 weeks of your induced abortion		Complications after 3 weeks and within 6 weeks of your induced abortion		Complications after 6 weeks of your induced abortion		Permanent complications after your induced abortion	
		Without probe	*With probe*	*Without probe*	*With probe*	*Without probe*	*With probe*	*Without probe*	*With probe*	*Without probe*	*With probe*	*Without probe*	*With probe*	*Without probe*	*With probe*
801	802	803	804	805	806	807	808	809	810	811	812	813	814	815	816

Treatment seeking behaviour regarding Abortion Complications

Sr. no. of ind. abn.	The symptoms as recorded in column 802	Did you seek any treatment for this? treatment?	Why did you not seek any started did	How many days after this problem you seek treatment?	Did you go to the same person for this treatment who managed your induced abortion If 'no' to whom did you go for the treatment?	What was the treat-ment given?	How long (no. of days) did you take this treatment?	Did you get relief by taking this treatment?	How many day after your problem started did you get relief?
817	818	819	820	821	822	823	824	825	826
		Yes ..... 1 ↓ *(Skip to 821)* No 2	*Skip to 826*					Yes ..... 1 No 2	
		Yes ..... 1 ↓ *(Skip to 821)* No 2	*Skip to 826*					Yes ..... 1 No 2	
		Yes ..... 1 ↓ *(Skip to 821)* No 2	*Skip to 826*					Yes ..... 1 No 2	
		Yes ..... 1 ↓ *(Skip to 821)* No 2	*Skip to 826*					Yes ..... 1 No 2	

Add extra sheets as per need.

After the last column skip to 302 (regarding her next pregnancy) ←

9. INDUCED ABORTION: LIFETIME (BEFORE JAN 1996)

Note: In this section we are going to collect information regarding induced abortion which occurred before Jan 1996.

Pregnancy No._____

Sr. no. of ind. abn.	What were the reasons for undergoing this abortion?	From where did you get the abortion done?	Did the abortion care provider advice you for contraceptive method post procedure?	How much did you spend in order to get this abortion done?
901	902	903	904	905
1	Unplanned pregnancy ..... A Unwanted pregnancy..... B Contraceptive failure..... C Last child was small ..... D Family problem ..... E Economic problem ..... F As per medical advice because of inadequate/fetal growth or physical handicap detected ..... G As per medical advice because mother's life was at stake ..... H Education/carrier was getting affected ..... I Family did not want this child ..... J Other **(*specify*)** ..... K Unwanted sex of the foetus ..... L ***Skip to section 10 (page no. xxxxxix)***	Govt. health care facility ..... A Private health care facility ..... B Non-institutional ..... C ***(Ex. – ANM / Dai / Bhagat / local abortionist etc.)***	Yes ..... 1 No..... 2 Don't remember 8	

Add extra sheets as per need.

Go to next pregnancy i.e., column no. 302.

10. HEALTH SERVICES SOUGHT FOR SEX IDENTIFICATION TEST

Pregnancy no._____

Sr. no. of test done	Which test did you undergo to know foetal sex?	Where did you get this test done from?	What is the name of this town/ village and it is in which district?	From whom did you come to know about this test and the person who conducts such test?	How did you reach this facility /centre hospital? *(Mode of transport)*	How much time did it take to reach to this facility/ centre /hospital?	Pl. record the total distance travelled *(To be calculated) (in km)*
1001	1002	1003	1004	1005	1006	1007	1008
1	Sonography ..... 1 Amniocentesis .. 2	Govt. health care facility ..... 1 Private health care facility ..... 2 Private sonography clinic 3		Relatives ..... A Friends / Neighbours ..... B Advertisement ..... C Other *(specify)* _____ D			
2	Sonography ..... 1 Amniocentesis .. 2	Govt. health care facility ..... 1 Private health care facility ..... 2 Private sonography clinic 3		Relatives ..... A Friends / Neighbours ..... B Advertisement ..... C Other *(specify)* ..... D			
3	Sonography ..... 1 Amniocentesis .. 2	Govt. health care facility ..... 1 Private health care facility ..... 2 Private sonography clinic 3		Relatives ..... A Friends / Neighbours ..... B Advertisement ..... C Other *(specify)* _____ D			

Sr. no. of test done	Who all accompanied you when you went for this test? (NAME)	Cost of identification test			
		Travel cost (for each person to & fro)	Cost of the test only	Boarding and lodging cost	TOTAL COST* *(To be calculated)*
1001	1009	1010	1011	1012	1013
1				Food: _____ Stay: _____	Actual: _____ Approx: _____
2				Food: _____ Stay: _____	Actual: _____ Approx: _____
3				Food: _____ Stay: _____	Actual: _____ Approx: _____

XXXXXX

***Calculate by adding 1010 + 1011 + 1012. In case the woman is unable to state the costs separately, for items in 1010, 1011, 1012 then ask her the approximately cost incurred for this sex identification test.**

Sr. no. of test done	Did the same person who did the test performed the abortion?	Were your abortion performed in the same health care facility where you did this test?	Who all in your household knew that you were doing this sex selective test? *(Pl. record all responses stated)*	Who all participated in the decision making of doing this test? *(Pl. record all responses stated)*
1014	**1015**	**1016**	**1017**	**1018**
1	Yes .... 1 No .... 2 NA .... 9 ***Skip to 1017***	Yes .... 1 No 2	Husband .... A Parent-in-laws .... B Parents .... C No one .... D Other *(specify)* ______________________ E	Self .... A Husband .... B Parent-in-laws .... C Parents .... D No one .... E Other *(specify)* ____________________ F
1	Yes .... 1 No .... 2 NA .... 9 ***Skip to 1017***	Yes .... 1 No 2	Husband .... A Parent-in-laws .... B Parents .... C No one .... D Other *(specify)* ______________________ E	Self .... A Husband .... B Parent-in-laws .... C Parents .... D No one .... E Other *(specify)* ____________________ F
1	Yes .... 1 No .... 2 NA .... 9 ***Skip to 1017***	Yes .... 1 No 2	Husband .... A Parent-in-laws .... B Parents .... C No one .... D Other *(specify)* ______________________ E	Self .... A Husband .... B Parent-in-laws .... C Parents .... D No one .... E Other *(specify)* ____________________ F

Add extra sheets as per need.

- **After the last column-In case this induced abortion falls in the reference period go to 729.**
- **In case this induced abortion falls in the lifetimes span go to 903.**

LETTER OF INTRODUCTION AND INFORMED CONSENT FORM

(For potential women research participants who would participate in the research by responding to interview schedule for women)

Respected Madam,

Greetings!

This is to introduce to you our institution, ourselves and the type of work that we are engaged in. This is also to inform you about this study and to seek your consent to participate in the study.

CEHAT (Center for Enquiry into Health and Allied Themes), is a research centre of Anusandhan Trust. CEHAT is engaged in addressing health related issues from a social perspective.

'Women's health' is one of the prime areas of concern at CEHAT. In India, people do not have access to quality health care services even today. We spend a lot of money to access health care services from the private sector because of sub-standard government health care services. These circumstances affect the women and children the most. Patriarchal social norms and women's secondary status in our society, also contribute to making women's access to health care services difficult. We, therefore, need to undertake studies to enhance our understanding of the ground realities from a social perspective to help change this scenario. This study is a part of this process. To achieve this end, we are going to collect information about women's obstetrics history, including spontaneous and induced abortion, and how it affects women's health.

This study is being conducted across the state of Maharashtra, India. The state was divided into six agroclimatic regions. Using village/ward level population and women's literacy as criteria for stratification, villages and wards were selected, making it possible to cover the study units from all the districts. The representative nature of the sample will make it possible for us to generalize the findings for the entire state of Maharashtra. All the households are selected following a strict stratified sampling procedure to achieve representation of the population.

We would like to mention here that this is a research venture, and we would not be providing any direct service to you. However, we would be giving to each study unit a few information posters carrying messages about health and related issues. We would also be giving a Marathi booklet on women's health to each of the women who will participate in the research. We hope these would be of some use to you and others in the village.

If you have any or doubts regarding our study you are welcome to come forward with your queries. The telephone numbers of our institution and two of the researchers who have been associated with CEHAT for a long time are given below. You may contact them in case you need further clarification.

Earlier, we have gathered information regarding your household from a responsible member of your family. We now seek your active participation in the study. Your participation will help make the study more meaningful.

In our study, we are going to collect information from women between age 15-54 years, who have been married at least once, irrespective of their current marital status.. Keeping in line with ethical principles of social science research, which we have convictions about, we request you to consent either verbally or in writing to participate in the study. In case of research participants who are less than 18 years, in addition to her own consent for participating in the study, we are seeking a written/verbal consent from an adult member of the family also.

During your interview, in case you wish to withdraw your participation from the study for any reason, you are entitled to do so. We will respect your right to withdraw midway through interview.

Lastly, we would like to ensure you that the information you share with us would be kept confidential and not be disclosed to anyone under any circumstances. Information collected from around 6000 women would be collated and analysed together. We will to ensure that the findings of this study are shared with you eventually in a form that would be useful to you.

Declaration by the research participant

I_____, have received full information about the study, and I hereby give my written/verbal consent to participate in the study*****.

Sign/Thumb impression:	Date:	Verbal consent:

Contact telephone numbers: Sunita Bandewar – Tele -Resi; Madhuri Sumant: Tele-Resi; Shelley Saha: Tele Resi

** One copy was given to the Research Participant.*

INTERVIEWER'S AND EDITOR'S OBSERVATION

To be recorded by the interviewers after the interview

1. Please record during the span of the interview:
   - Was the research participant alone all throughout 1
   - Someone came during the interview..... 2
     (Record relationship with the research participant)
   - The whole interview was conducted in front of other people 3
     (Record relationship with research participant)
2. Gave written consent ☐
3. Gave verbal consent ☐
4. Comments about research participant: _____
   _____
   _____
5. Comments on specific questions ***(if any)***: _____
   _____
   _____
6. Any other comments / observations: _____
   _____
   _____

EDITOR'S OBSERVATIONS / COMMENTS

_____

_____

_____

Name of Editor:_____ Date:_____

Centre For Enquiry Into Health And Allied Themes
(Research Centre Of Anusandhan Trust)

CEHAT, in Hindi means "Health". CEHAT, the research centre of Anusandhan Trust, stands for research, action, service and advocacy in health and allied themes. Socially relevant and rigorous academic health research and action at CEHAT is for the well being of the disadvantaged masses, for strengthening people's health movements and for realising right to health care. Its inst-tutional structure acts as an interface between progressive people's movements and academia.

CEHAT's objectives are to undertake socially relevant research and advocacy projects on various socio-political aspects of health; establish direct services and pro-grammes to demonstrate how health services can be made accessible equitably and ethically; disseminate information through databases and relevant publications, sup-ported by a well-stocked and specialised library and a documentation centre.

We are a multi disciplinary team with training and experience in Medicine, Life Sciences, Economics, Social Sciences, Social Work, Journalism and Law. CEHAT's projects are based on its ideological commitments and priorities, and are focused on four broad themes, (1) Health Services and Financing (2) Health Legislation, Ethics and Patients' Rights, (3) Women's Health, (4) Investigation and Treatment of Psycho-Social Trauma. An increasing part of this work is being done collaboratively and in partnership with other organisations and institutions.

ISBN: 81-86042-32-7