

Appendix 1: Definitions of outcome variable and independent variables used in the study

Type	Variable	Operational Definitions and Categories	Questions Asked in NFHS
Outcome Variable	Quality Antenatal Care	Quality Antenatal Care (ANC) refers to a minimum of four ANC visits with timely registration and the first visit in the first trimester, along with receiving appropriate content of care by a skilled health provider. In this study, this variable is categorised by author as: Adequate Quality ANC: covers all mentioned components of ANC Inadequate Quality ANC: not covered at least one of the mentioned components of ANC No ANC: there are no ANC visits throughout the pregnancy	It is composed as a composite score by the author based on the questions of NFHS, which is used to create variables on dimensions of the outcome variable.
Dimension of Outcome Variable	ANC provided by Skilled Health Care Providers	It refers to the antenatal care provided by doctors, auxiliary nurse midwives (ANM), nurses, midwives, or lady health visitors. It is categorised by author as 1= Yes if provided by a skilled health care provider, 0= No, if provided by others or not provided	Did you see anyone for antenatal care for this pregnancy? Whom did you see?
Dimension of Outcome Variable	Timeliness	It refers to the antenatal care visit during the first trimester (0-3 months) and pregnancy registration during the first trimester. It is categorised by author as 1= Yes if ANC provided and pregnancy registered timely, 0= No, if not provided timely or not provided	Was this pregnancy registered? How many months pregnant were you when you registered? How many months pregnant were you when you first received antenatal care for this pregnancy?
Dimension of Outcome Variable	Sufficiency	It refers to pregnant women who receive four or more ANC visits. It is categorised by author as 1= Yes if ANC visits are sufficient, 0= No, if ANC visits are not sufficient or not provided	How many times did you receive antenatal care during this pregnancy?

Dimension of Outcome Variable	Appropriateness of Care	A score is generated using eight essential indicators, where appropriate ANC is considered only if a mother has received at least seven out of these eight components. These components include weighted taken, blood pressure measured, urine sample taken, blood taken, abdomen examined, counselling provided, tetanus injection given, IFA tablets given for at least 100 days. Each of the components is categorised as 0= not received and 1=received. Overall, the score is categorised by author as 1=Yes; appropriate care received if at least seven components are yes, 0 = No, appropriate care not received, or ANC not provided	As part of your antenatal care during this pregnancy, were any of the following done at least once? Were you weighed? Was your blood pressure measured? Did you give a urine sample? Was a sample of your blood taken for testing? Was your abdomen examined? During (any of) your antenatal care visit(s), were you told about the following signs of pregnancy complications? (<i>Vaginal Bleeding, Convulsions, Prolonged Labour, Severe Abdominal Pain, High Blood Pressure</i>) Were you told where to go if you had any pregnancy complications? During this pregnancy, were you given an injection in the arm to prevent the baby from getting tetanus, that is, convulsions after birth? During this pregnancy, how many times did you get a tetanus injection? During this pregnancy, were you given or did you buy any iron folic acid tablets or syrup? During the whole pregnancy, for how many days did you take the tablets or syrup?
Independent Variable - Community level Factors	Regions	In NFHS, states are classified into certain regions; we have followed the same classification with six categories 1=North, 2=Central, 3=East, 4=North-East, 5=West, 6=South	STATE
Independent Variable - Community level Factors	Place of Residence	Place of Residence is categorised as 1= Urban, 2=Rural	TYPE OF PSU (URBAN = 1, RURAL = 2)
Independent Variable - Socio-	Mother's age at most recent birth	It refers to the age of the mother when she gave birth to the youngest living or non-living child. It is categorised by author as 1= under 21 years, 2= 22-29 years, 3=30-39 years, 4=40-49 years	In what month and year were you born? On what day, month and year was (NAME) born?

demographic factors			
Independent Variable - Socio-demographic factors	Mother's Education Level	It includes the education level of women aged 15-49 years who have given birth to at least one child in the five years preceding the survey. It is categorised as 1=No Education, 2=Primary Education, 3=Secondary education, 4=Higher Education	Have you ever attended school? What is the highest grade you completed?
Independent Variable - Socio-demographic factors	Social Group	Social group is categorised as 1=Scheduled Caste, 2=Scheduled Tribes, 3=Other Backward Class, 4= Others	Do you belong to a scheduled caste, a scheduled tribe, other backward class, or none of these?
Independent Variable - Socio-demographic factors	Religion	Religion is categorised as 1= Hindu, 2= Muslim, 3= Others	What is your religion?
Independent Variable - Socio-demographic factors	Wealth Quintile	Wealth Quintile is categorised as 1=Poorest, 2= Poorer, 3=Middle, 4=Richer, 5=Richest	It is a composite measure of a household's cumulative living standard based on a household's ownership of selected assets, such as televisions and bicycles; materials used for housing construction; and types of water access and sanitation facilities.
Independent Variable - Socio-demographic factors	Birth Order	Birth order refers to the order in which a child is born; higher the order means the youngest child. It is categorised as 1= first order, 2= second or third order, 3= fourth or more order	Now I would like to ask about all the births you have had during your life. Have you ever given birth?
Independent Variable - Health Knowledge	Mass Media Exposure	Mass media exposure is categorised by the author as 1= No exposure, 2= Having exposure, where no exposure means women aged 15-49 years given at least one birth in the last five years don't read newspapers, watch television or listen to the radio. Having exposure means at least once read a newspaper or watch television or listen to radio	Do you read a newspaper or magazine at least once a week, less than once a week or not at all? Do you listen to the radio at least once a week, less than once a week or not at all? Do you watch television at least once a week, less than once a week or not at all?

Independent Variable - Enabling Factor	Health Insurance coverage	It includes women aged 15-49 years who have given at least one birth in the last five years preceding the survey, whether they are covered by health insurance or not. It is categorised by author as 1= No insurance coverage, 2=Yes, have health insurance coverage	Are you covered by any health scheme or any health insurance ?
Independent Variable - Enabling Factor	Relationship with head of households	It includes the relationships of women aged 15-49 years who have given at least one birth in the last five years preceding the survey with the head of the household. It is categorised as 1=herself or anyone from maternal side, 2= Husband, 3=In laws	What is the relationship of (NAME) to the head of the household?
Independent Variable - Enabling Factor	Type of facility exposed for ANC	It includes the place of receiving ANC for the most recent birth among women aged 15-49 years who have given at least one birth in the last five years preceding the survey. It is categorised by the author as 1=Home only or not utilised any ANC services, 2= Public facilities, 3= Private facilities	Where did you receive antenatal care for this pregnancy?
Independent Variable - Need Factor	Adverse outcome of previous pregnancy	It refers to miscarriages/stillbirth/ abortion for the most recent birth among the women aged 15-49 years who have given at least one birth in the last five years preceding the survey It is categorised by the author as 1= No adverse outcome, 2= Yes, adverse outcome	Have you ever had a pregnancy that miscarried, was aborted, or ended in a stillbirth?
Independent Variable - Need Factor	Intended pregnancy	It refers to the most recent pregnancy, whether it was planned and accepted or not, among women aged 15-49 years who have given at least one birth in the last five years preceding the survey It is categorised by the author as 1= Yes, intended pregnancy, 2= Not an intended pregnancy	When you got pregnant with (NAME), did you want to get pregnant at that time?