RESEARCH QUESTIONNAIRE

Prevalence and Risk Factors Associated with Caesarean Section

Hospital-based cross-sectional study | Interview and medical-record review

Study hospital: _____

Study period: From ____ / ____ / _____ to ____ / ____ / _____

Study ID: _____ Delivery date: ____ / ____ / _____

Data collector code: _____

Instructions for Data Collectors

- Include all eligible women who deliver in the study hospital during the defined study period, whether vaginally or by caesarean section.
- Assign a unique study ID. Do not record names, phone numbers, or other direct personal identifiers on the questionnaire.
- Use the maternal interview for sociodemographic information and relevant history; verify clinical and delivery information from the medical record whenever possible.
- For multiple-response questions, select all applicable options. Use “Unknown/not documented” rather than guessing.
- Record the primary indication for caesarean section from the clinician’s documentation. This item is not applicable to vaginal deliveries.
- The questionnaire should be pilot-tested and approved by the research supervisor/ethics committee before full data collection.

Participant Information and Consent

You are invited to participate in a study about the frequency of caesarean delivery and factors associated with it. Participation is voluntary. Your care will not be affected by your decision. Information will be kept confidential and used for research only. You may decline to answer any interview question.

Consent obtained? *Obtain consent according to the approved protocol.*

☐ Yes — continue
☐ No — stop the interview

Section A. Sociodemographic Characteristics

A1. Age at delivery (completed years):

_____

A2. Residence:

☐ Urban
☐ Rural
☐ Other/uncertain

A3. Marital status:

☐ Married
☐ Single
☐ Divorced/separated
☐ Widowed

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☐ Prefer not to answer

A4. Highest educational level completed:

☐ No formal education
☐ Primary
☐ Secondary
☐ University/college
☐ Postgraduate
☐ Other

A5. Main occupation:

☐ Housewife/unpaid domestic work
☐ Government employee
☐ Private-sector employee
☐ Self-employed
☐ Student
☐ Unemployed
☐ Other: _____

A6. Approximate monthly household income (SDG), if appropriate and acceptable:

_____

A7. Health insurance or other health-cost coverage:

☐ Yes
☐ No
☐ Unknown
☐ Prefer not to answer

A8. Approximate travel time from home to this hospital:

☐ Less than 30 minutes
☐ 30–59 minutes
☐ 1–2 hours
☐ More than 2 hours
☐ Unknown

Section B. Obstetric and Reproductive History

B1. Gravidity (total number of pregnancies, including the current pregnancy):

_____

B2. Parity (number of previous births at or beyond the locally defined viability threshold):

_____

B3. Number of previous live births:

_____

B4. Number of previous stillbirths:

_____

B5. Number of previous miscarriages/abortions, if reported:

_____

B6. Previous caesarean section before this delivery?

☐ Yes
☐ No
☐ Unknown

B7. If yes, number of previous caesarean sections:

_____

B8. Any previous pregnancy or delivery complication? Select all that apply:

☐ Previous stillbirth

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- ☐ Preterm birth
- ☐ Postpartum haemorrhage
- ☐ Obstructed/prolonged labour
- ☐ Hypertensive disorder of pregnancy
- ☐ Gestational diabetes
- ☐ Other: _____
- ☐ None
- ☐ Unknown

B9. Was the current pregnancy planned?

- ☐ Yes
- ☐ No
- ☐ Unsure
- ☐ Prefer not to answer

Section C. Antenatal Care

C1. Did you attend antenatal care (ANC) during this pregnancy?

- ☐ Yes
- ☐ No
- ☐ Unknown

C2. If yes, number of ANC visits:

_____

C3. Trimester of first ANC visit:

- ☐ First trimester
- ☐ Second trimester
- ☐ Third trimester
- ☐ Do not remember
- ☐ No ANC

C4. Main place of ANC:

- ☐ Public hospital
- ☐ Primary healthcare centre
- ☐ Private clinic/hospital
- ☐ More than one type
- ☐ No ANC
- ☐ Other

C5. Was a medical or pregnancy-related condition diagnosed before labour/delivery?

- ☐ Yes
- ☐ No
- ☐ Unknown

C6. If yes, select all documented/reported conditions:

- ☐ Hypertension/pre-eclampsia
- ☐ Diabetes during pregnancy
- ☐ Anaemia
- ☐ Multiple pregnancy
- ☐ Placenta previa/placental disorder
- ☐ Malpresentation
- ☐ Fetal growth restriction
- ☐ Other: _____
- ☐ Unknown

Section D. Current Pregnancy, Admission and Labour

D1. Gestational age at delivery (completed weeks), preferably from the record:

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_____

D2. Number of fetuses:

- ☐ Singleton
- ☐ Twins
- ☐ Three or more
- ☐ Unknown

D3. Fetal presentation at delivery:

- ☐ Cephalic
- ☐ Breech
- ☐ Transverse/oblique
- ☐ Other
- ☐ Unknown/not documented

D4. Was the mother referred from another facility?

- ☐ Yes
- ☐ No
- ☐ Unknown

D5. Admission status before delivery:

- ☐ Booked/planned admission
- ☐ Unplanned/emergency admission
- ☐ Transferred/referral
- ☐ Unknown

D6. Labour status before delivery:

- ☐ Spontaneous labour
- ☐ Induced labour
- ☐ No labour before caesarean
- ☐ Not applicable
- ☐ Unknown

D7. Was labour augmented, if labour occurred?

- ☐ Yes
- ☐ No
- ☐ Unknown
- ☐ Not applicable

D8. Were any of the following documented during this pregnancy or labour? Select all that apply:

- ☐ Hypertensive disorder
- ☐ Gestational diabetes
- ☐ Antepartum haemorrhage
- ☐ Prolonged/obstructed labour or failure to progress
- ☐ Fetal distress/non-reassuring fetal status
- ☐ Malpresentation
- ☐ Multiple pregnancy
- ☐ Suspected cephalopelvic disproportion
- ☐ Placenta previa/placental abruption
- ☐ Previous caesarean section
- ☐ Failed induction
- ☐ Other: _____
- ☐ None documented
- ☐ Unknown

Section E. Delivery Outcome — Primary Study Outcome

E1. Date of delivery:

_____

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E2. Mode of delivery (verify from delivery register):

- ☐ Vaginal delivery
- ☐ Caesarean section
- ☐ Other/unknown

E3. If caesarean section, type:

- ☐ Elective/planned
- ☐ Emergency
- ☐ Unclear/not documented
- ☐ Not applicable

E4. Primary documented indication for caesarean section:

- ☐ Previous caesarean section/uterine scar
- ☐ Fetal distress/non-reassuring fetal status
- ☐ Obstructed labour/failure to progress
- ☐ Cephalopelvic disproportion
- ☐ Breech or other malpresentation
- ☐ Hypertensive disorder
- ☐ Placenta previa/placental abruption
- ☐ Multiple pregnancy
- ☐ Failed induction
- ☐ Cord prolapse
- ☐ Other documented indication: _____
- ☐ Not documented
- ☐ Not applicable

E5. Were additional indications documented?

- ☐ Yes
- ☐ No
- ☐ Not applicable/unknown

E6. Source of delivery information:

- ☐ Delivery register
- ☐ Medical record
- ☐ Maternal interview only
- ☐ More than one source
- ☐ Other

Coding note: Mode of delivery is the primary outcome for prevalence and association analyses. The caesarean indication is collected only for caesarean births and should not be treated as a risk factor for having a caesarean.

Section F. Maternal and Newborn Outcomes (Secondary / Descriptive)

F1. Maternal status at discharge:

- ☐ Discharged alive
- ☐ Transferred/referred
- ☐ Maternal death
- ☐ Unknown/not documented

F2. Maternal complication after delivery documented?

- ☐ Yes
- ☐ No
- ☐ Unknown

F3. If yes, select all that apply:

- ☐ Postpartum haemorrhage
- ☐ Wound infection
- ☐ Other infection
- ☐ Blood transfusion
- ☐ ICU admission

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☐ Other: _____
☐ Unknown

F4. Newborn outcome:

☐ Live birth
☐ Stillbirth
☐ Other/unknown

F5. Birth weight (grams), if available:

_____

F6. Neonatal unit admission?

☐ Yes
☐ No
☐ Unknown/not documented

Section G. Researcher-Completed Record Review

G1. Delivery register entry available?

☐ Yes
☐ No

G2. Maternal medical record available?

☐ Yes
☐ No

G3. Mode of delivery recorded consistently across sources?

☐ Yes
☐ No
☐ Unable to assess

G4. For caesarean births, indication documented?

☐ Yes
☐ No
☐ Not applicable

G5. Were key variables missing from the record?

☐ Yes
☐ No

G6. If yes, specify missing variables:

_____

G7. Additional notes (do not include names or direct identifiers):

_____

_____

Methodological Notes for the Research Team

1. Population and denominator

The target study population is all eligible women who deliver at the study hospital during the defined study period. Include both vaginal and caesarean births. The prevalence proportion is calculated as: number of caesarean deliveries divided by total eligible deliveries, multiplied by 100. Specify in the protocol whether the unit is women/delivery episodes or babies; for multiple pregnancies, use maternal delivery episodes for the main rate.

2. Analysis of associated factors

Compare women with caesarean delivery against women with vaginal delivery. Potential explanatory variables include maternal age, residence, education, parity, previous caesarean, multiple pregnancy, gestational age, fetal presentation, pregnancy complications, ANC, referral status and labour characteristics. Use univariable analysis followed by an

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appropriate multivariable model; for a cross-sectional prevalence outcome, consider robust Poisson regression to estimate adjusted prevalence ratios, or logistic regression if adjusted odds ratios are appropriate to the analysis plan. Account for confounding and avoid interpreting associations as causal.

3. Avoid outcome leakage and timing problems

Do not use the indication for caesarean section as a predictor of caesarean delivery because it is defined only among caesarean cases. For risk-factor analysis, clearly distinguish factors known before the delivery decision from events that may occur as part of labour management. Maternal and newborn outcomes after delivery should generally be treated as secondary outcomes, not baseline risk factors.

4. Data quality and ethics

Develop a codebook, train data collectors, pilot the questionnaire, define eligibility criteria and the study period in advance, secure ethical approval and hospital permission, obtain informed consent for interviews, and protect records and confidentiality. Report missing data and the number of eligible deliveries screened, included and excluded.

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