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The effect of mother's age on neonatal survival associated with first and second birth in Southern rural Tanzania.

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Layout

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- Objectives
- Methods
- Results
- Conclusion and policy implications

Background to research problem

- 3.8 million new babies die in the first month of life annually
- Neonatal mortality (0–28 days) accounts for
  - two-thirds of global infant (0–1year) mortality
  - 40 percent of overall under-five deaths
- Child mortality still high in LMIC countries in spite of different interventions
- MDG-4 : reduce the rate of under-five mortality by two third between 1990 and 2015
- Tanzania on track to reach child mortality (0-5 yrs) reduction goals, but slower progress in reducing neonatal deaths
- Neonatal mortality from Tanzania DHS declined by 32% from 38/1000 in 1992 to 26/1000 in 2010
- Need better insight into drivers of neonatal mortality

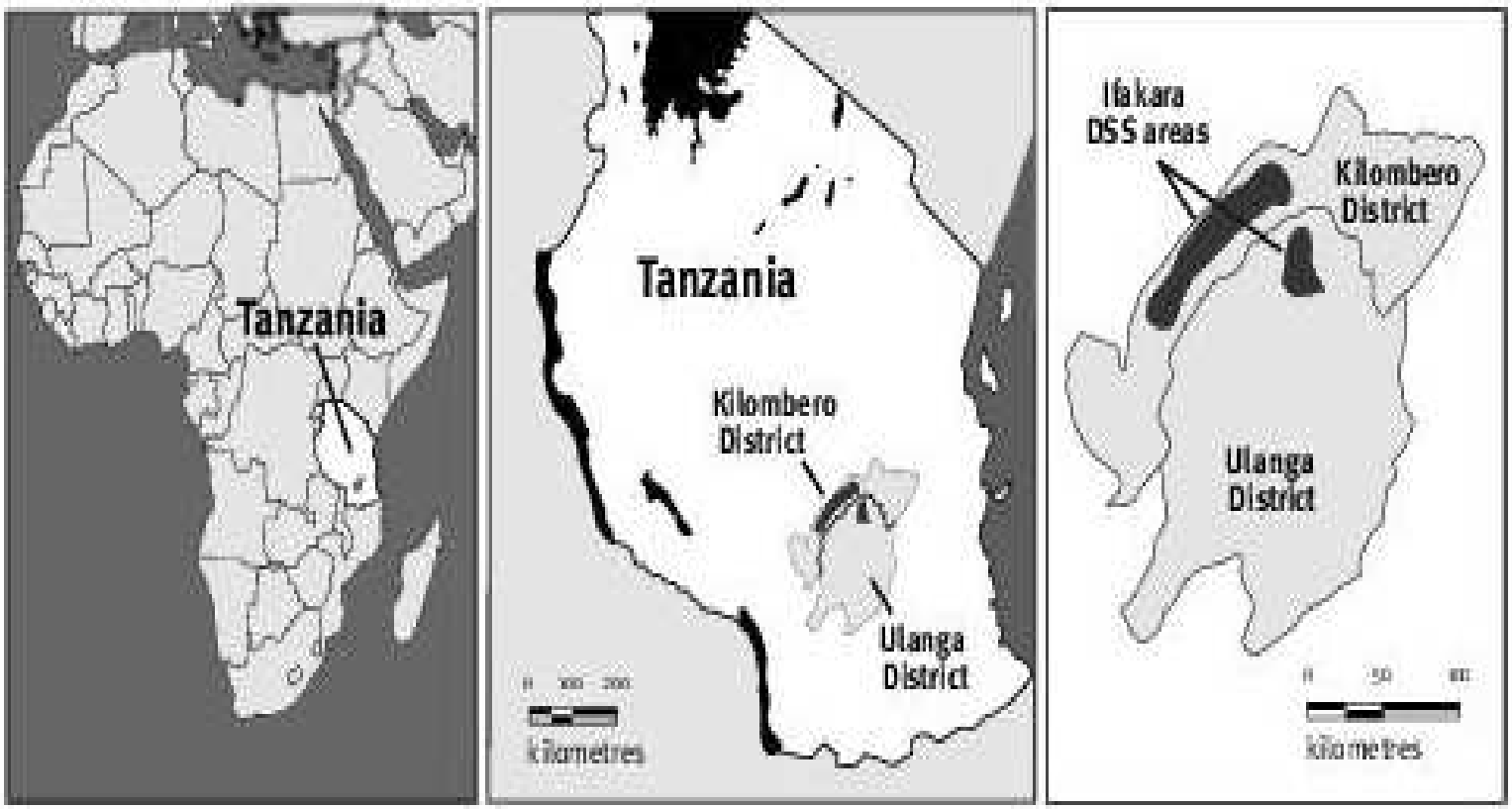
Objectives

- Main objective: To investigate the influence of mother's age on neonatal survival of newborns from first and second births in Southern rural Tanzania
- Specific objectives :
  - To measure and compare the neonatal survival among neonates born to teenage and non-teenage mothers
  - To explore the effect of other socio-demographic factors on neonatal survival

Methods: Study area

- The analysis used data from Ifakara rural DSS (HDSS) which is collected every four months since 1997
- Situated in Kilombero and Ulanga District in Morogoro region
- Population >120,000
- Data collection :
  - Births, deaths, pregnancies, pregnancy outcomes
  - Marital status changes, co-residence of husband
  - Migrations (in and out of the survey area)
  - SES, education

Study area


Tanzania
Tanzania
Kilombero District
Ulanga District
Kilometres
Ifakara DSS areas
Kilombero District
Ulanga District
Kilometres

Kilombero river

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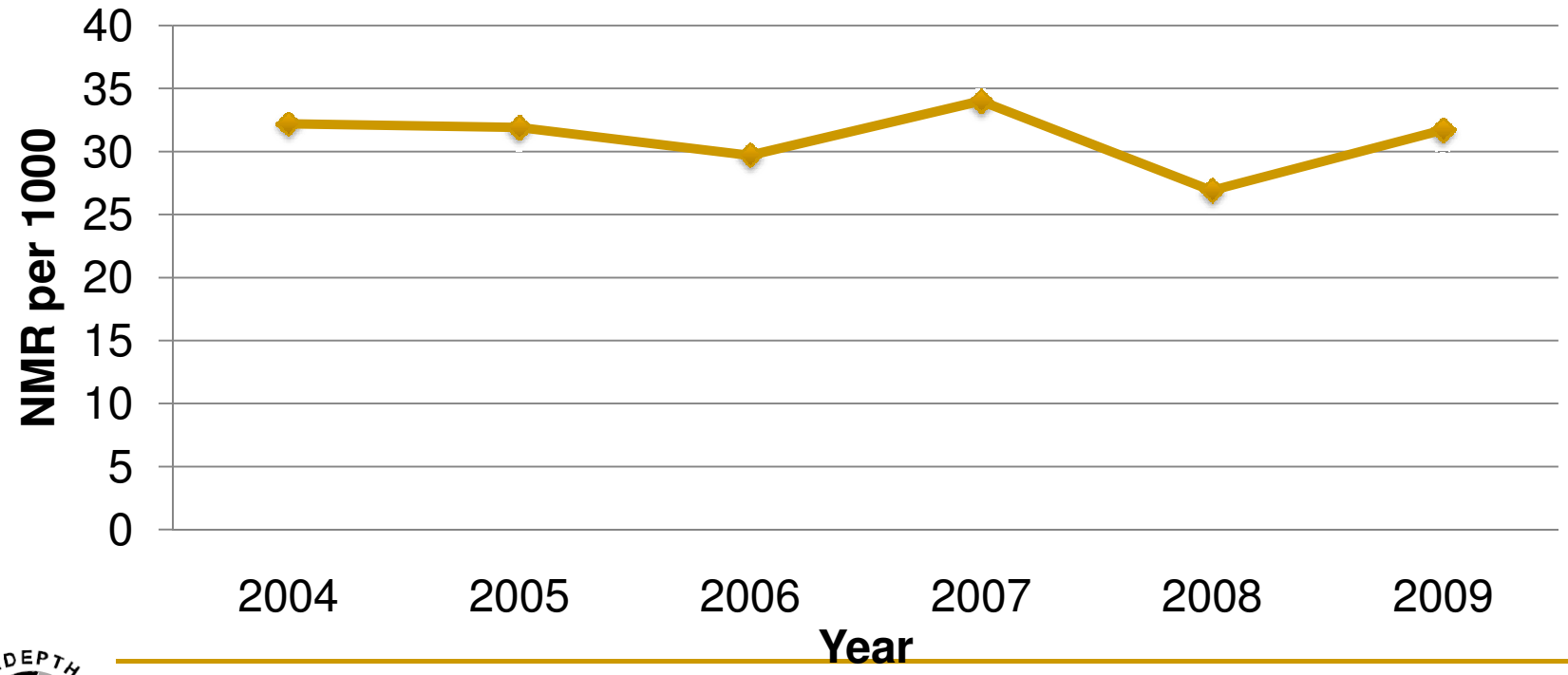
Methods: Analysis

- All live births that occurred between 2004 to 2009
- Outcome variable = neonatal survival
- Determinant variables / explanatory variables=
  - age of mother, SES of household (asset score), education
  - sex of newborn, birth order, place of delivery
  - co-residence of husband,
  - Season
- Kaplan-Meier survival analysis to estimate the distribution of survival times, Cox proportional hazards analysis to assess relative effect of determinants on survival
- Surviving newborns censored at 28 days
- Statistical analyses used STATA version 11.0

Results

- For 2004 - 2009, A total of 19,651 live births occurred in Ifakara DSS
- A total of 610 neonatal death occurred equivalent to 31 per 1000 live births (95%CI: 25/1000-38/1000).



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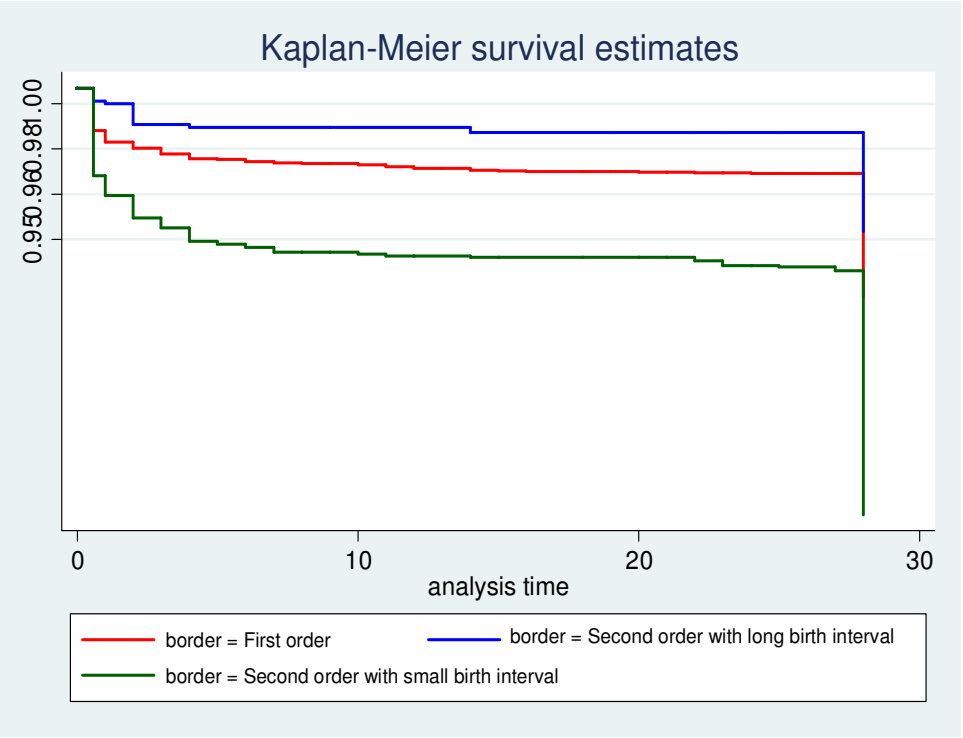
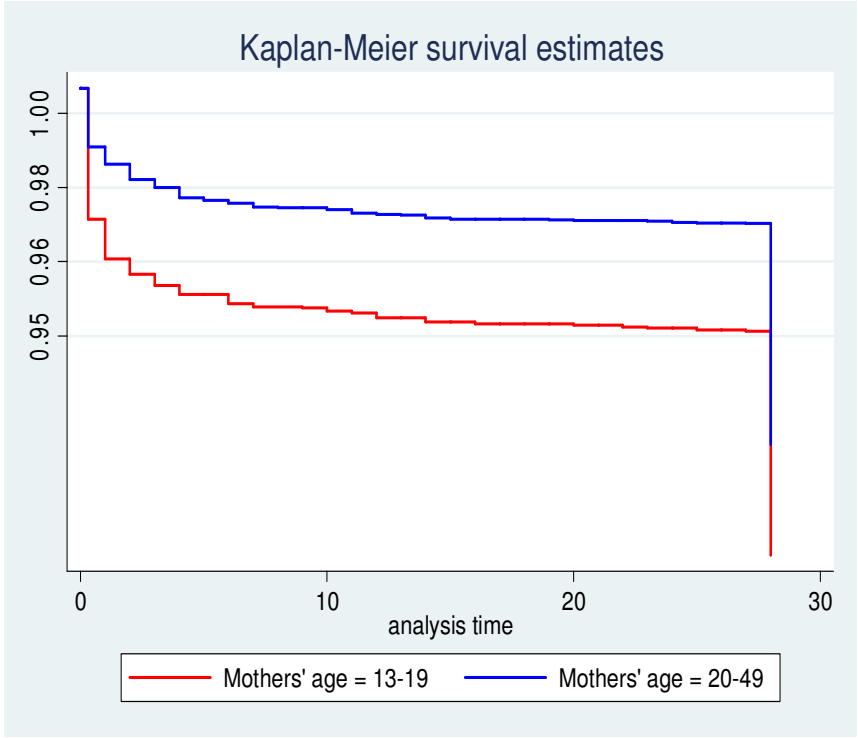
Kaplan-Meier survival curves estimates_

Log-rank test: p<0.05



Fg3:Probability of neonatal survival by birth order

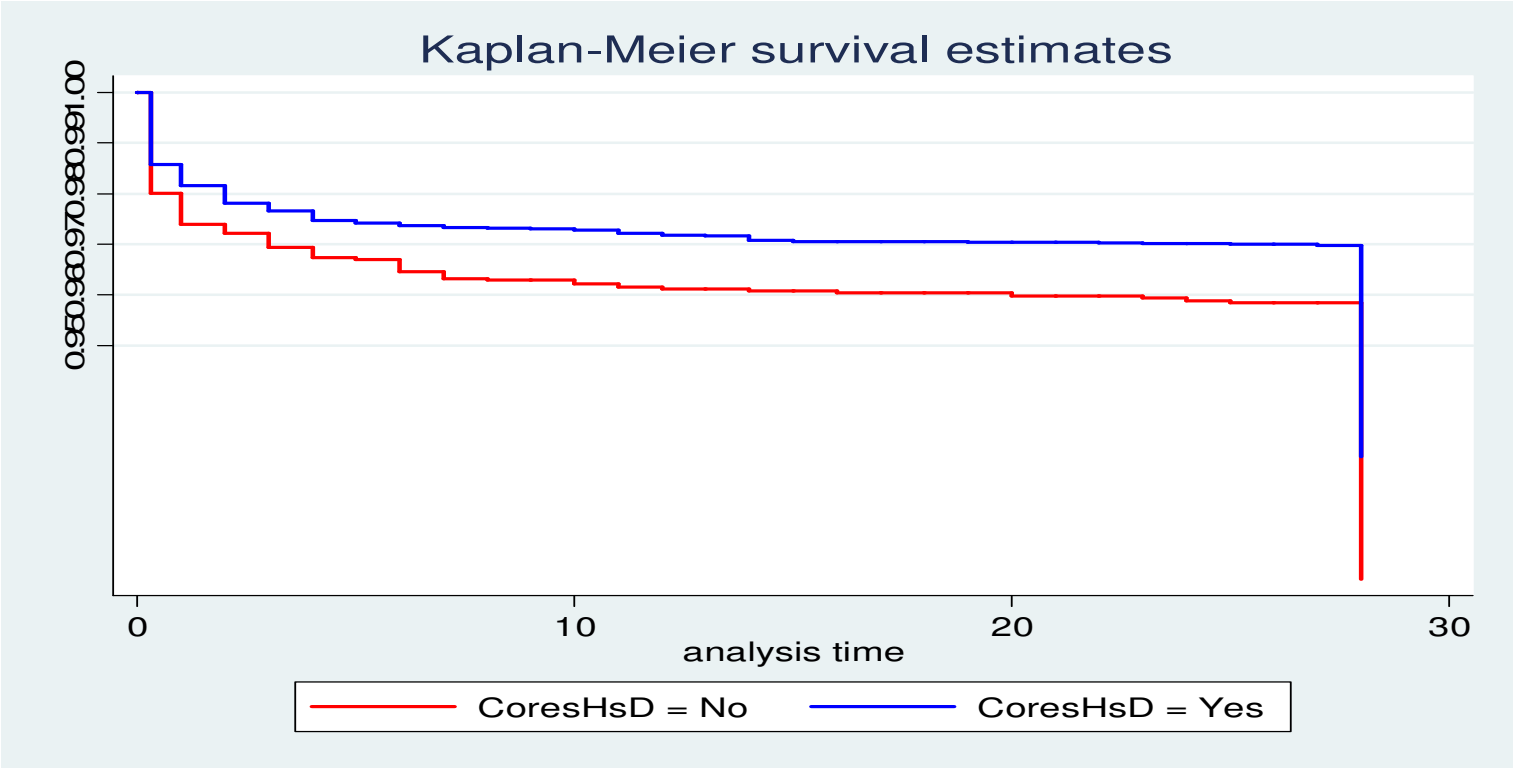
Log-rank test: p<0.05



Fg4:Probability of neonatal survival by mothers' age

Kaplan-Meier survival curves estimates_

Log-rank test: p<0.05



Fg3:Probability of neonatal survival by Co-residence of husband

Cox hazard multivariate regression for predictors of neonatal survival

Factor	HR	95%CI	P-value
Sex of newborn			
- Female	Ref		
- Male	1.09	0.98-1.21	0.098
Mothers' age			
- Non-teenager mothers (20-49 years)	Ref		
- Teenager mothers (13-19 years)	1.20	1.06-1.35	0.003
Birth order			
- First birth	Ref		
- Second births with long birth interval	0.72	0.55-0.95	0.019
- Second births with small birth interval	2.18	1.90-2.50	<0.001
Co-residence husband			
- Husband absent	Ref		
- Husband present	0.73	0.64-0.83	<0.001

Cox hazard multivariate regression for predictors of neonatal survival

Factor	HR	95%CI	P-value
Season			
-Wet season	Ref		
-Dry season	0.97	0.88-1.08	0.620
Education of mothers'			
-Below and primary education	Ref		
-Above primary education	0.77	0.48-1.22	0.275
Household SES at birth			
-Lowest SES quintile	Ref		
-2nd Lowest SES quintile	1.20	0.87-1.20	0.776
-Middle SES quintile	0.92	0.78-1.08	0.314
-2nd higher SES quintile	0.91	0.77-1.07	0.235
-Highest SES quintile	0.93	0.78-1.10	0.399
Place of delivery			
-Outside health facility	Ref		
-Health facility	1.06	0.95-1.18	0.298

Conclusion and policy implications

- Newborns of teenage mothers, of fathers who are not residing in the household and those born too soon after their siblings are at increased hazard of dying within 28 days from being born
- Poverty reduction is not expected to lead to reduce neonatal mortality
- Improvement of neonatal survival in developing countries should include on interventions to reduce teenage pregnancy and fill the unmet need for Family Planning for spacing births
- Protective role of father is not related to SES or age of the mother and should be explored in more detail

Thank You!