Socioeconomic and demographic determinants of birth weight in southern rural Ghana: evidence from Dodowa Health and Demographic Surveillance System (DHDSS)

Alfred Kwesi Manyeh

Presentation Outline

1. Background
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BACKGROUND (1)

- Low birth weight (LBW) is a major public health problem worldwide especially in the developing countries.
- It is a major determinant of mortality, morbidity and disability in neonates, infancy and child hood.
- It has long term impact on health outcomes in adult life.
- It also results in substantial costs to the health sector and imposes a significant burden on the society as a whole.

BACKGROUND (2)

- The Ghana Multiple Indicator Cluster Survey (MICS) found LBW prevalence of 9.1% and 11% in 2006 and 2011 respectively.
- However, in 2006 only 2 in 5 babies were weighed at birth.

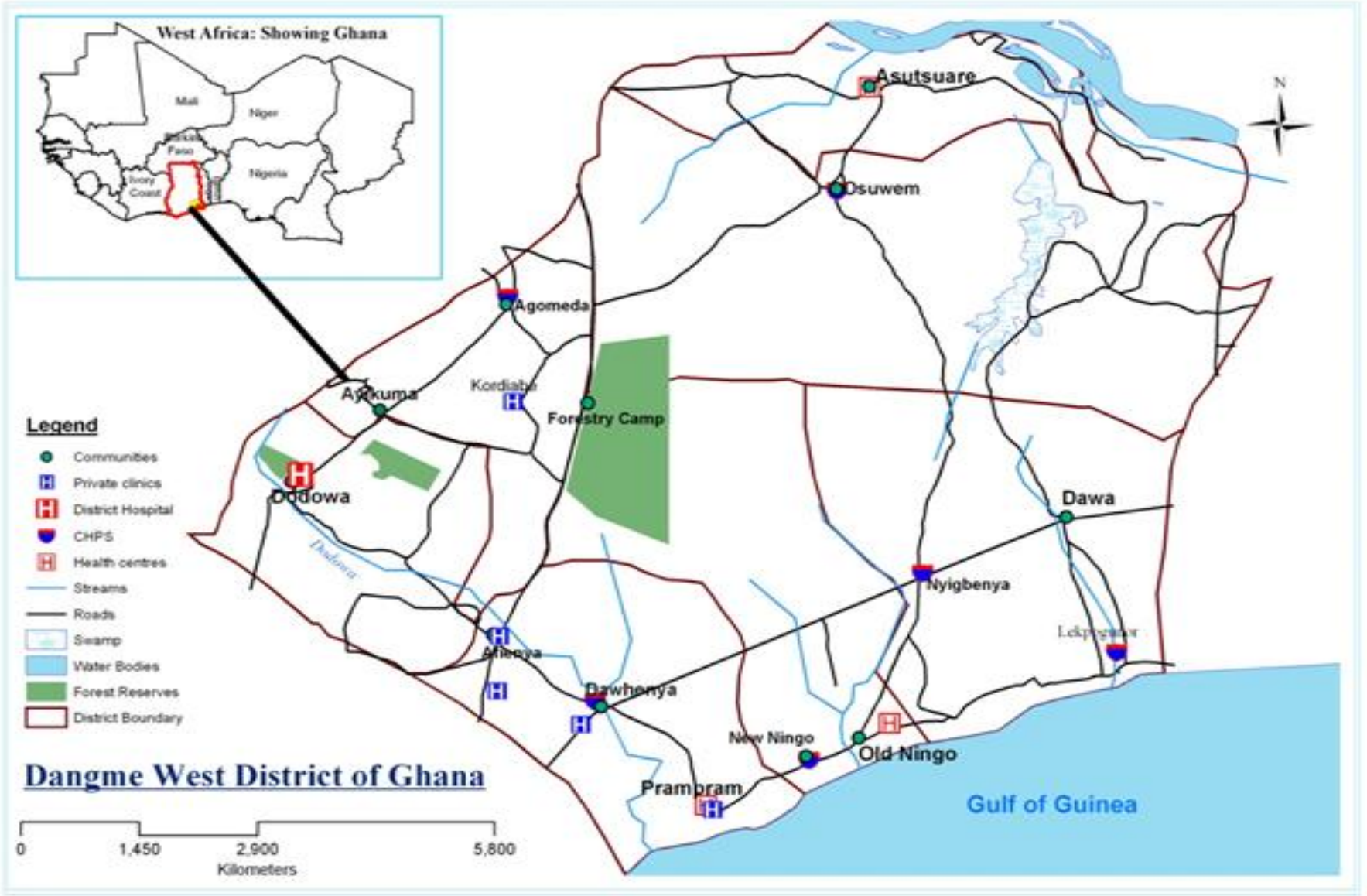
- Children from rural households and those from the poorest households in Ghana are less likely than the more advantaged children to be weighed at birth.

OBJECTIVE

To examine the socioeconomic and demographic determinants of birth weight and the incidence of low birth weight in Dodowa Health and Demographic Surveillance System (DHDSS) in rural southern Ghana from 2011 to 2013.

Methodology (1)

Study Area – Dodowa Health and Demographic Surveillance Area, Ghana



Methodology (2)

- Study design:
    - Using secondary data from Dodowa HDSS
- Study paticipants:
  - All mothers and their respective live born babies who are registered in the Dodowa HDSS from 1st January 2011 to 31st December 2013.
  - A total of 6,777 women and their babies

Methodology (3)

- The univariable and multivariable association were explored using logistic regression

- STATA 11 at 5% significant level

- Results are presented in tables and charts

Results

Percentage Distribution of Incidence of Low Birth Weight by Year

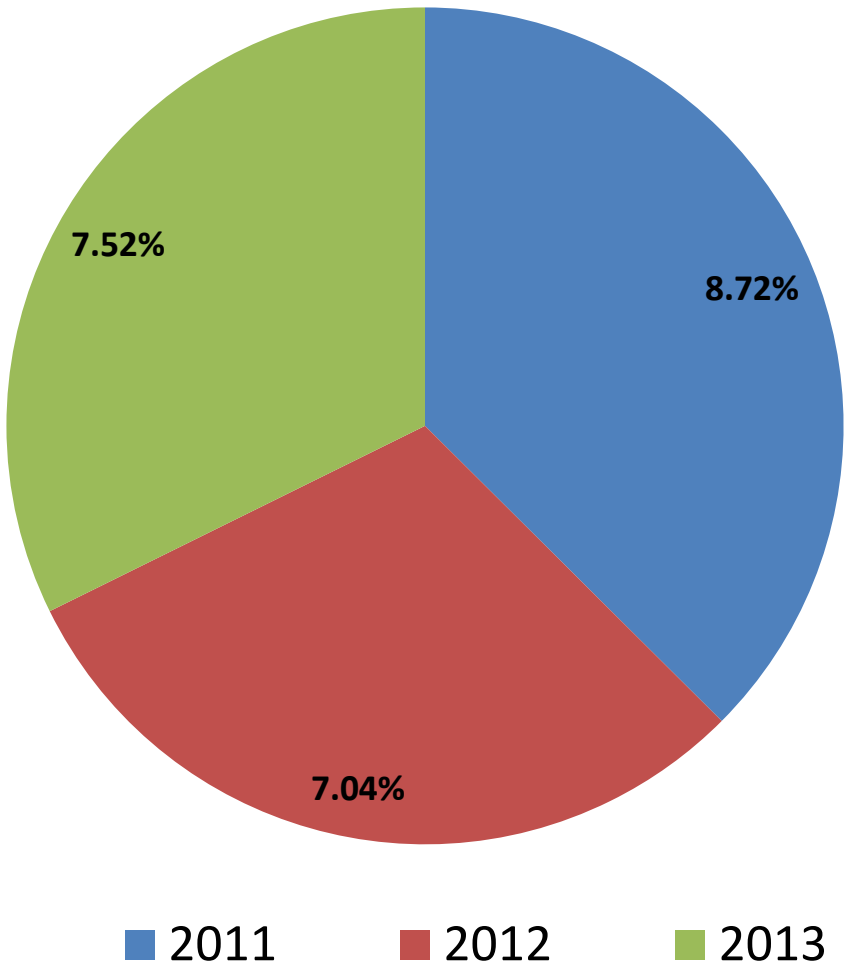


Table 1: Crude and adjusted odd ratios of determinates of birth weight.

	Crude		Adjusted*	
Characteristics	OR	P-Values (95% CI)	OR	P-Value (95% CI)
Age Group				
< 20	1.00		1.00	
20-24	2.32	<0.001(1.65 -3.26)†	2.18	<0.001(1.53 -3.10)†
25-29	2.73	<0.001(1.96 -3.79)†	2.34	<0.001(1.62 -3.39)†
30-34	2.87	<0.001(2.06 -4.01)†	2.20	<0.001(1.48 -3.28)†
34+	3.59	<0.001(2.56 -5.04)†	2.52	<0.001(1.67 -3.82)†
Marital Status				
Single	1.00			
Married	1.16	0.157(0.94 -1.14)		
Separated/Divorced	0.89	0.690(0.51 -1.55)		
Cohabiting	1.14	0.141(0.92 -1.55)		
Level of Education				
No Education	1.00			
Primary	0.92	0.451(0.75-1.14)		
Junior High School	1.12	0.239(0.93-1.55)		
Senior High School & above	1.19	0.184(0.92-1.55)		
Occupation				
Unemployed	1.00		1.00	
Farmer	1.33	0.022(1.04 -1.70)†	1.10	0.466(0.85 -1.42)
Artisan	1.31	0.031(1.03 -1.67)†	1.23	0.115(0.95 -1.58)
Trader	1.23	0.050(1.00 -1.50)	1.04	0.687(0.84 -1.29)
Civil Servant	1.82	0.012(1.14 -2.90)†	1.77	0.021(1.09 -2.87)†
Student	0.92	0.554(0.71 -1.20)	1.31	0.068(0.98 -1.74)
Others	1.40	0.197(0.84 -2.35)	1.43	0.184(0.84 -2.41)

OR: Odd Ratio, **†:**statistically significant, **CI:** Confidence Interval, ***:**Correct classification rate of the model=75.96%,

Table 2: Crude and adjusted odd ratios of determinates of birth weight.

Characteristics	Crude		Adjusted*	
Parity	OR	P-Values (95% CI)	OR	P-Value (95% CI)
Parity1	1.00		1.00	
Parity2	1.48	<0.001(1.20 -1.83)†	1.30	0.026(1.03 -1.63)†
Parity3	1.46	<0.001(1.16 -1.82)†	1.23	0.116(0.95 -1.59)
Parity3+	2.12	<0.001(1.74 -2.59)†	1.81	<0.001(1.38 -2.35)†
Socio Economic Status				
Poorest	1.00		1.00	
Poorer	1.30	0.033(1.02 -1.65)†	1.30	0.040(1.01-1.66)†
Poor	1.03	0.795(0.81 -1.31)	1.03	0.796(0.81 -1.32)
Less Poor	0.93	0.516(0.73 -1.17)	0.93	0.578(0.74 -1.19)
Least Poor	1.27	0.033(1.02 -1.58)†	1.24	0.064(0.99 -1.55)
Infant's Gender				
Female	1.00		1.00	
Male	1.52	<0.001(1.32 -1.76)†	1.56	<0.001(1.35 -1.81)†
Have you receive IPT				
Yes	1.00			
No	1.15	0.333(0.87 -1.52)		
Number of ANC Visits				
Less than 4 visit	1.00			
At least 4 visit	1.15	0.206(0.92 -1.44)		
Cooking Fuel				
Gas	1.00			
Charcoal	0.82	0.099(0.65 -1.04)		
Wood	0.95	0.682(0.74 -1.22)		
Others	0.28	0.222(0.03 -2.18)		

OR: Odd Ratio, **†:**statistically significant, **CI:** Confidence Interval, ***:**Correct classification rate of the model=75.96%,

Conclusion

- The result revealed that 40.21% of the infants were not weighed at birth.
- The incidence of LBW from 2011 to 2013 is 8.72, 7.04 and 7.52 respectively.
- Having infant birth weight ≥ 2.5kg is higher associated with socioeconomic status of women household, gender of infant, parity, occupation and maternal age.

Recommendation

- Future intervention in the study area to bridge the gap between the poor and least poor women

- Girls should be encourage not to have babies in their teenage.

These recommendations may apply to similar rural settings in Ghana.

To…

Acknowledgement

DHRC – Ghana

INDEPTH Network

Thank You