

# Maternal Religion and Diet, and its Association with Placental Index in the Upper East Region of Ghana

By

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# Introduction

- Low birth weight
  - weight of a infant less than 2,500 g (5.8pounds) (ICD-10, 2010)
    - diabetes, and coronary diseases (Bale *et al.* 2003)
    - higher risk of infant mortality
- 20 million infants worldwide (15.5% of all births)
  - 95.6% from developing countries.
- Sub-Saharan Africa (SSA) - 16%
- Ghana (WHO, 2011)
  - 6,506 LBW – 3.23% - 52<sup>nd</sup>
  - Less attention

# Aim

- To determine maternal religion and diet and its association with placental index
- **Specific objectives**
  - To determine the relationship between maternal religion and placenta index
  - To determine the relationship between maternal diet and placenta index

# Hypothesis

- Maternal religion and diet have influence on placental index.

# Method

- Study site and area
  - Garu Presbyterian Hospital and Quality Medical Centre, in the Garu-Tempene District in the Upper East region.
- Sample size
  - $n = 94$  women.
- Weighing of babies and placenta
  - Docbel-Braun Baby Classic bench scale
    - sex , gestational age and mother's age.



Docbel-Braun Baby Classic bench scale



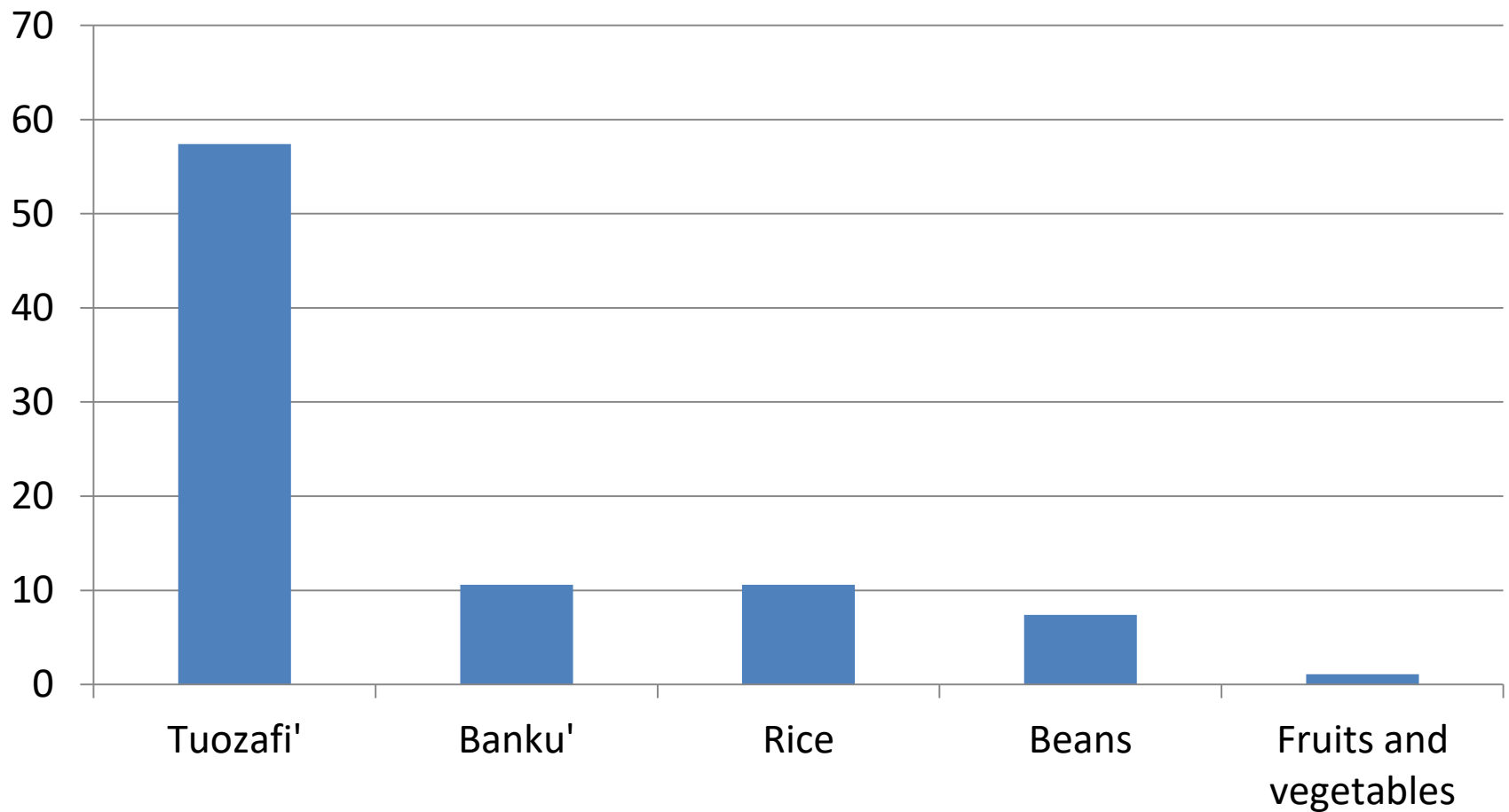
# Results and Discussion

# Table 1: Maternal age, gestation, birth weight, placental weight and placental index with minimum and maximum values

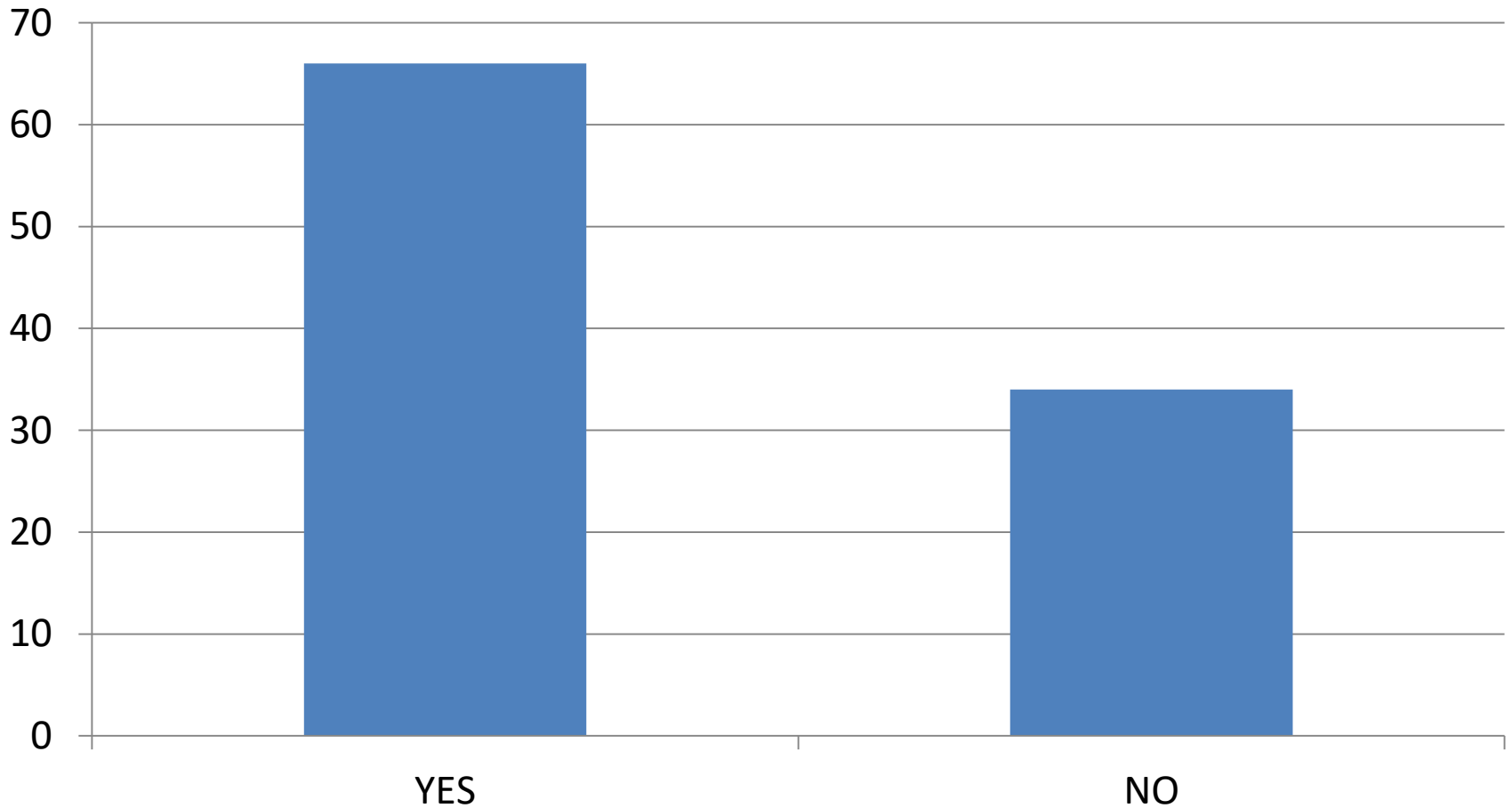
Variable	Minimum	Maximum	Mean	Standard deviation
Maternal Age/ years	15	49	27	7.30
Gestation/weeks	26	49	38	3.37
Birth Weight/ kg	1.5	3.6	2.69	0.42
Placenta Weight/kg	0.2	1.5	0.65	0.23
Placenta Index	0.0909	0.5556	0.24	0.09



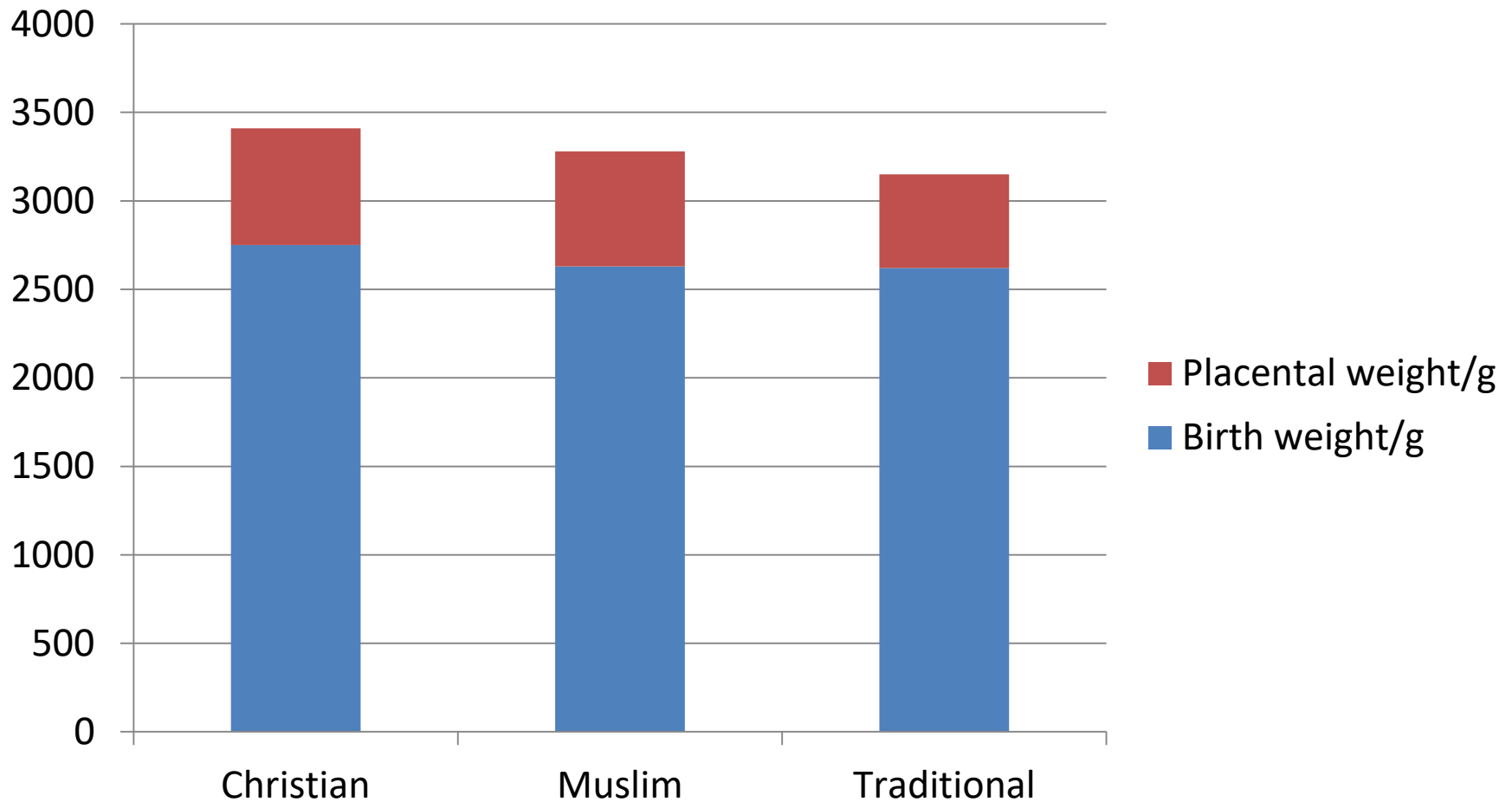
# Figure 1: Frequently eaten food by individual participant during pregnancy



# Figure 2: Frequency distribution showing whether mothers get to eat meals three times daily



# Figure 3: Birth weight and placental weight variables among Religions

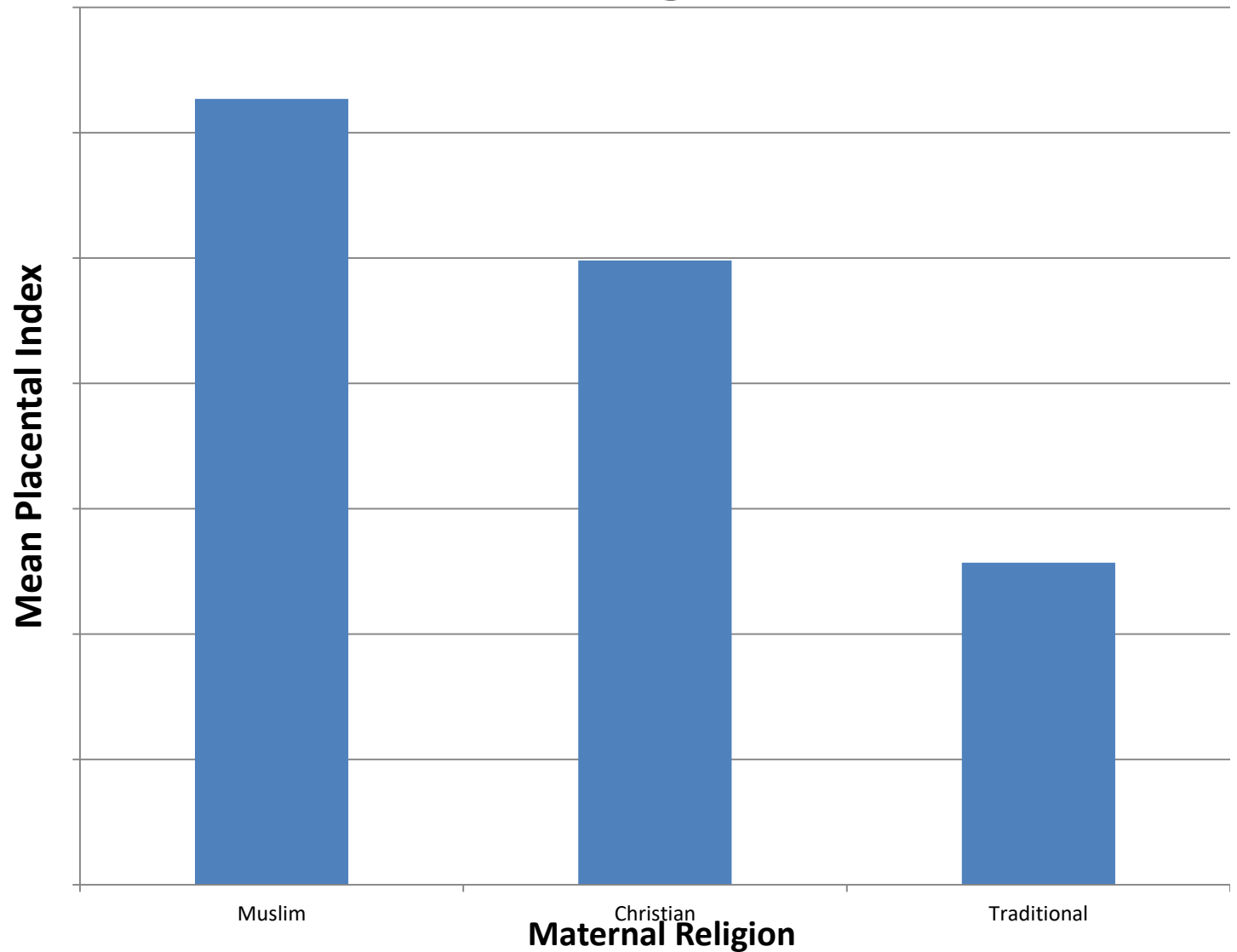


**\*Mean birth weight and placental weight values**

# Table 2: Placental indices among the religious groups with minimum and maximum values

Religion	Mean	Standard deviation	Minimum	Maximum
Christian	0.2398	0.07	0.13	0.44
Muslim	0.252	0.11	0.09	0.56
Traditional	0.2157	0.74	0.16	0.36

# Figure 4: Mean placental index against maternal religion



# Table 3: ANOVA table showing comparison of placental indices between and within maternal Religion

	Sum of squares	Df	Mean square	F	Sig.
Between groups	20.903	47	.445	1.646	0.047
Within groups	12.427	46			
Total	33.330	93			

# Table 4: ANOVA table showing comparison between maternal diet and placenta index

	Sum of squares	Df	Mean square	F	Sig.
Between groups	386.299	47	8.219	1.68	0.04
Within groups	225.020	46	4.892		
Total	611.319	93			

# Conclusion

- The placental indices were found to vary amongst the various identified maternal religions. There was a statistical correlation between maternal diet and placenta index.



# Limitations

- Weighing of placenta was most of the time done by the nurses on duty at night when the investigator was not available, and this might affect values obtained. Also, the influence of other maternal demographic factors was not considered in the present study.

# Recommendation

- Similar studies should be conducted with a larger sample size to provide comprehensive information on religion, dietary difference and placental indices for the whole community. Also, duration of the study should be extended to involve follow up observations to ascertain the influence of placental index on later life development of diseases in adulthood.

**Thank You!**

# Reference

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