

A cross sectional study from the National Obstetrics Registry

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INTRODUCTION

In the United States there has been racial/ethnic disparities in adverse birth outcomes despite significant public health attention and increased multidisciplinary efforts. Adverse birth outcomes include preterm birth which is birth before 37 weeks and low birth weight (BW less than 2500g). The causes of birth outcome disparities are unclear whether it is a purely genetic cause or if race is simply a proxy for socioeconomic status which have been largely refuted.

To date obstetric performance among the different ethnic groups have not been looked at in Malaysia. This study was done to see which of the 3 main ethnic groups had the worst Obstetric performance so that measures can be taken to improve maternal and fetal outcomes.

METHODOLOGY

This is a cross sectional study over a three-year period from 1st January 2013 to 31st December 2015. Data was obtained from the National Obstetrics Registry, Malaysia which is an online database that captures Obstetric data from 13 tertiary hospitals in Peninsular Malaysia and Sabah and Sarawak and 1 hospital in the Federal territory. All Malay, Chinese and Indian women who delivered during this period were included in the study. Ethical approval for the NOR was provided by the Medical Research and Ethics Committee of the Ministry of Health, Malaysia (Approval number: NMRR15-620-25530). Statistical analysis performed using STATA 14.0. Simple logistic regression was used to access the risk group. P value <0.05 was taken as the cut off value of significance

RESULTS

There was a total of 410,679 deliveries in the study period. 80.12% of deliveries were from the 3 main ethnic groups in Malaysia namely Malay (70.39%), Chinese (5.49%) and Indian (4.24%). Indian women had an adjusted odds ratio 2.31(95% CI(2.23 to 2.40)for anemia, 1.73(95%CI 1.33 to 2.26) for preeclampsia, 1.31(95%CI 1.25 to 1.38) for Gestational Diabetes Mellitus, 1.31(95% CI 1.25 to 3.29) for Preexisting Diabetes, 1.60 (95% CI 1.39 to 1.38) for intrauterine growth restricted fetus, 1.60 (95%CI 1.39 to 1.86) for small for gestational age baby, 1.58(95% CI 1.53 to 1.64) for preterm deliveries, 1.27(95% CI 1.22 to 1.33) to have a caesarean section, 1.90(95% CI 1.84 to 1.96) to have a baby with low birth and 1.62(95% CI 1.56 to 1.68) for baby to be admitted to neonatal intensive care unit.

RESULTS

OBSTETRIC PERFORMANCE

Does ethnicity have an adverse outcome on maternal and fetal outcome?



70.39%
MALAY MOTHERS



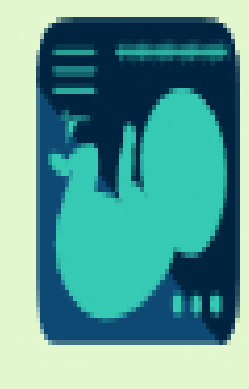
5.49%
CHINESE MOTHERS



4.24%
INDIAN MOTHERS

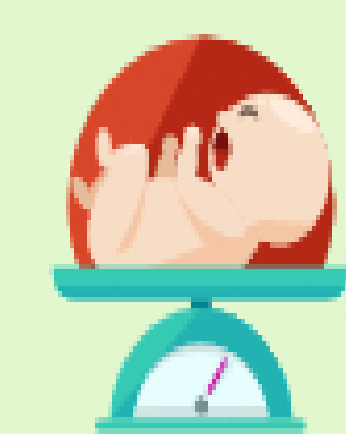


LSCS 24.4% in Malays



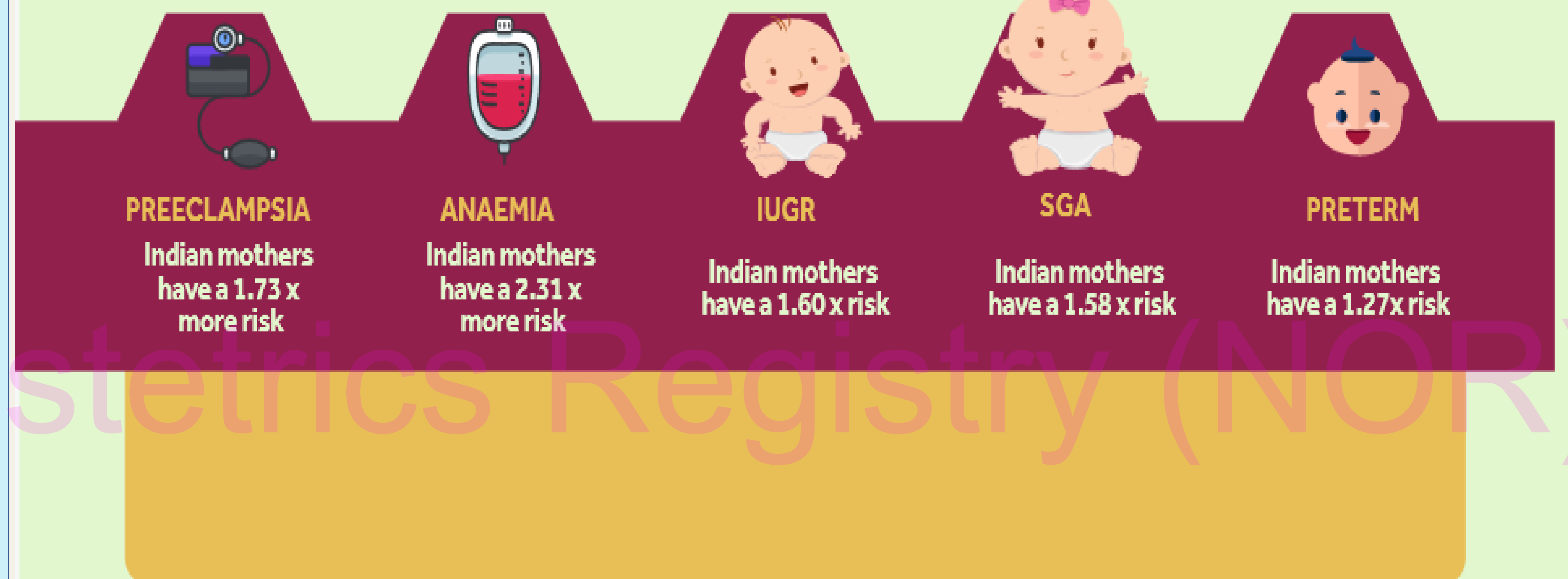
SGA in Indians: 27%

SGA in Malays 19%



LBW in Indians: 20.3%

LBW in Malays 13.7%



Mother outcomes						
Anemia	Yes		No		Odd ratio	95% CI
	n	%	n	%		
Malay	43602	15.1	226474	78.3	ref	
Chinese	3678	16.3	16264	72.1	1.17	(1.13,1.22)
Indian	5057	29.0	11354	65.2	2.31	(2.23,2.40)
Pre-eclampsia						
	Yes		No		Odd ratio	95% CI
	n	%	n	%		
Malay	1698	0.6	4216	1.5	ref	
Chinese	114	0.5	279	1.2	1.01	(0.81,1.27)
Indian	97	0.6	139	0.8	1.73	(1.33,2.26)
GDM						
	Yes		No		Odd ratio	95% CI
	n	%	n	%		
Malay	24,330	8.4	264,755	91.6	ref	
Chinese	1,996	8.8	20,558	91.2	1.06	(1.01,1.11)
Indian	1,872	10.7	15,550	89.3	1.31	(1.25,1.38)
PDM						
	Yes		No		Odd ratio	95% CI
	n	%	n	%		
Malay	1,285	0.4	287,800	99.6	1.29	(1.02,1.62)
Chinese	78	0.3	22,476	99.7	ref	
Indian	150	0.9	17,272	99.1	2.50	(1.90,3.29)
Mode of Delivery						
	CS		Vaginal		Odd ratio	95% CI
	n	%	n	%		
Malay	71,293	24.4	211,137	72.3	ref	
Chinese	6,800	29.7	15,793	69.0	1.28	(1.24,1.31)
Indian	6,813	38.6	10,630	60.2	1.90	(1.84,1.96)
Baby outcomes						
IUGR						
	Yes		No		Odd ratio	95% CI
	n	%	n	%		
Malay	2079	0.7	289,856	99.3	ref	
Chinese	176	0.8	22,709	99.2	1.08	(0.93,1.26)
Indian	201	1.1	17,464	98.9	1.60	(1.39,1.86)
SGA						
	Yes		No		Odd ratio	95% CI
	n	%	n	%		
Malay	55394	19.0	228,459	78.3	ref	
Chinese	4212	18.4	17,353	75.8	1.00	(0.97,1.04)
Indian	4776	27.0	12,471	70.6	1.58	(1.53,1.64)
Baby Status						
	Preterm		Term		Odd ratio	95% CI
	n	%	n	%		
Malay	32,902	11.3	251,679	86.2	ref	
Chinese	2,586	11.3	19,061	83.3	1.04	(0.99,1.08)
Indian	2,470	14.0	14,865	84.1	1.27	(1.22,1.33)
Baby discharge NICU						
	Yes		No		Odd ratio	95% CI
	n	%	n	%		
Malay	26,175	9.0	255,066	87.4	1.20	(1.14,1.26)
Chinese	1,771	7.7	20,686	90.4	ref	
Indian	1,764	10.0	15,550	88.0	1.33	(1.24,1.42)
Birth Weight						
	Low		Normal		Odd ratio	95% CI
	n	%	n	%		
Malay	45,566	15.6	234,291	80.3	ref	
Chinese	3,822	16.7	18,490	80.8	1.06	(1.03,1.10)
Indian	4,124	23.3	13,076	74.0	1.62	(1.56,1.68)

CONCLUSION

In this study the Malay women had the best obstetric performance whilst the Indian women had the worst performance. These findings warrant increase attention to this group of women during antenatal, intrapartum and the postpartum period.

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