

Predictors for Spontaneous and Induced Preterm Labor in Malaysia: Results from NOR 2009



Lim ESS¹, Fonseka M¹, Karalasingam SD², Jeganathan R², and Rampal KG¹

¹Perdana University Graduate School of Medicine, Perdana Universiti

²Clinical Research Center, Ministry of Health Malaysia

INTRODUCTION

Preterm labor accounts for 12.9 million or 9.6% of all birth worldwide where approximately 85% were concentrated in Africa and Asia while Europe, North America, Latin America, and Caribbean contributed to a smaller percentage (Beck et al., 2010).

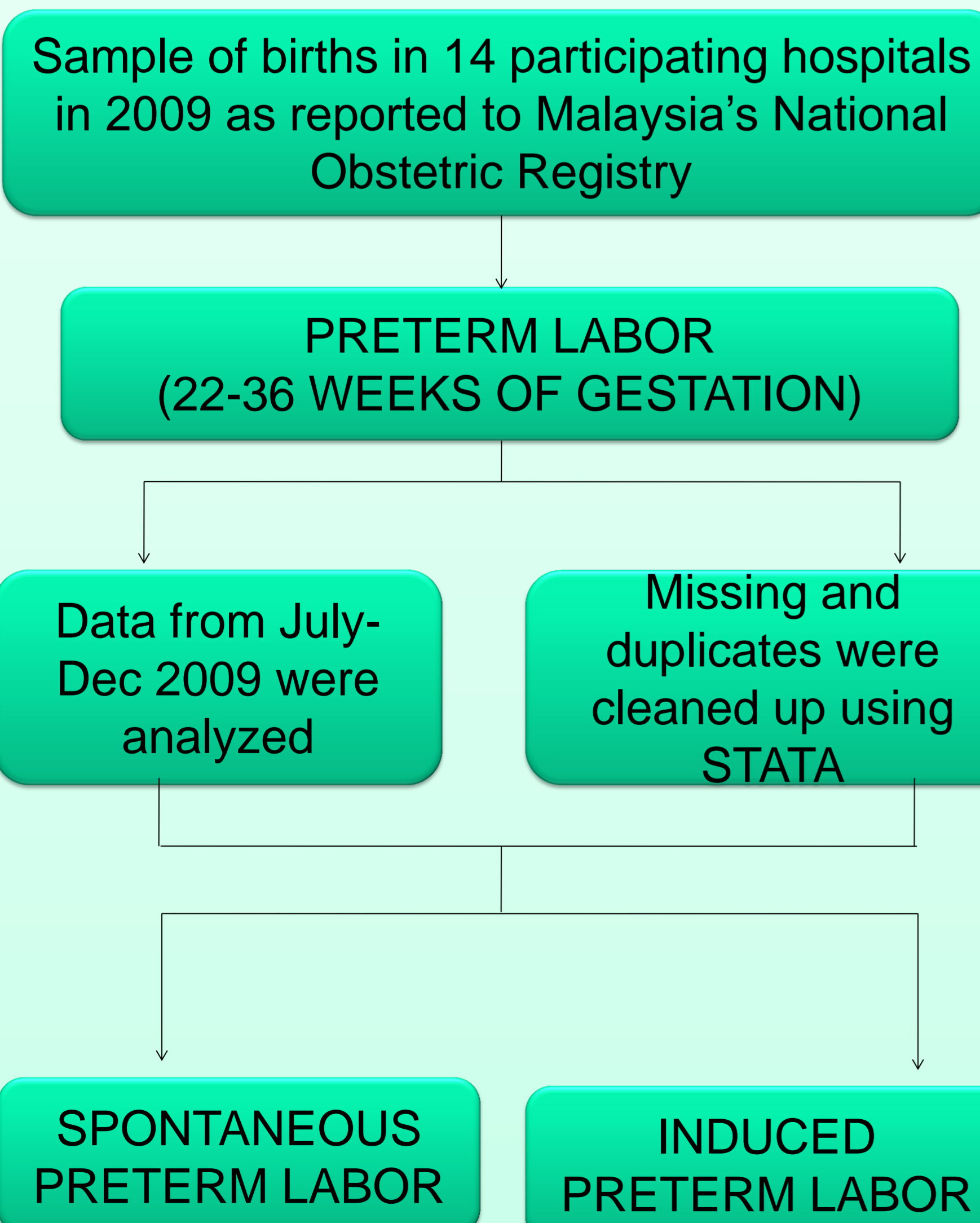
The causes of preterm labor are still not fully understood but it is estimated that 75% of preterm labors are spontaneous (Morken et al., 2005, Ananth & Vintzileos, 2006) and 20% are iatrogenic. Many predictors such as individual factors, socio-economic factors, working conditions, and obstetric and gynaecological history have been identified in the past 20-30 years (Goffinet, 2005). However, specific predictors directed for spontaneous and induced preterm labor have not been determined.

Best strategies and efficacy in management of preterm labor can be implemented if more precise and earlier diagnosis can be done in women at very high risk (Goffinet, 2005).

OBJECTIVES

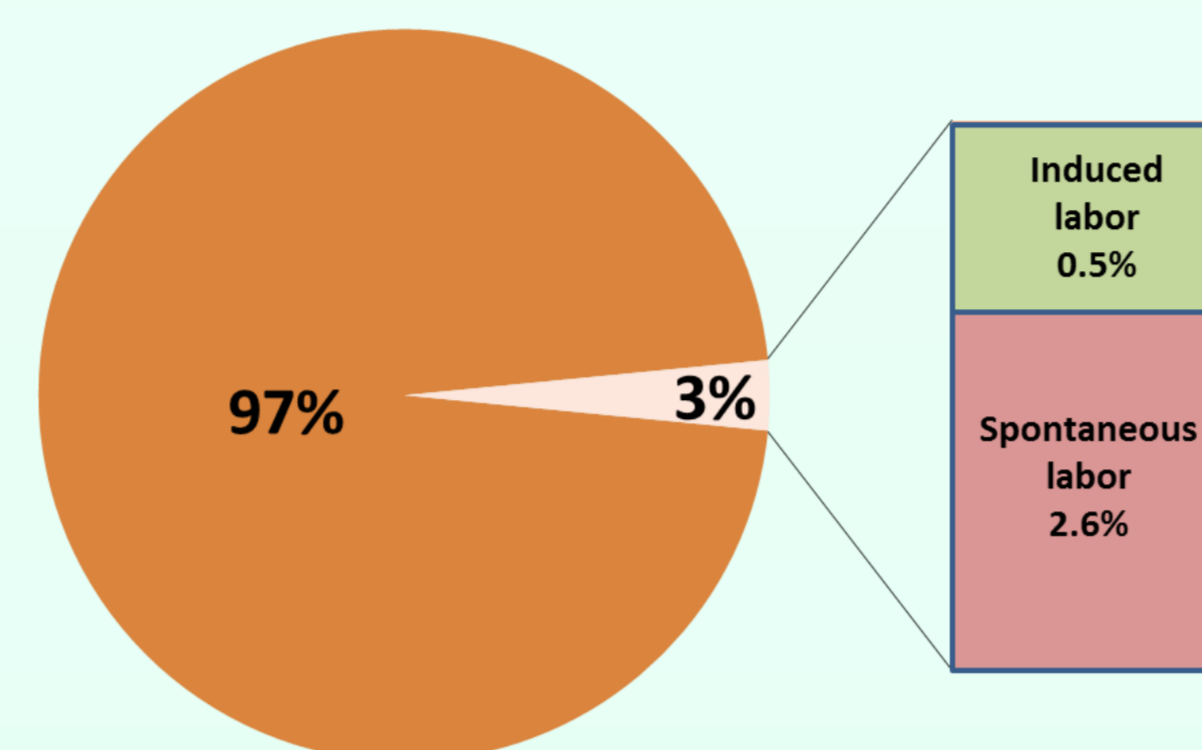
The objectives of this study were to estimate incidence, and determine the predictors of induced and spontaneous preterm labor in Malaysian women.

METHODOLOGY

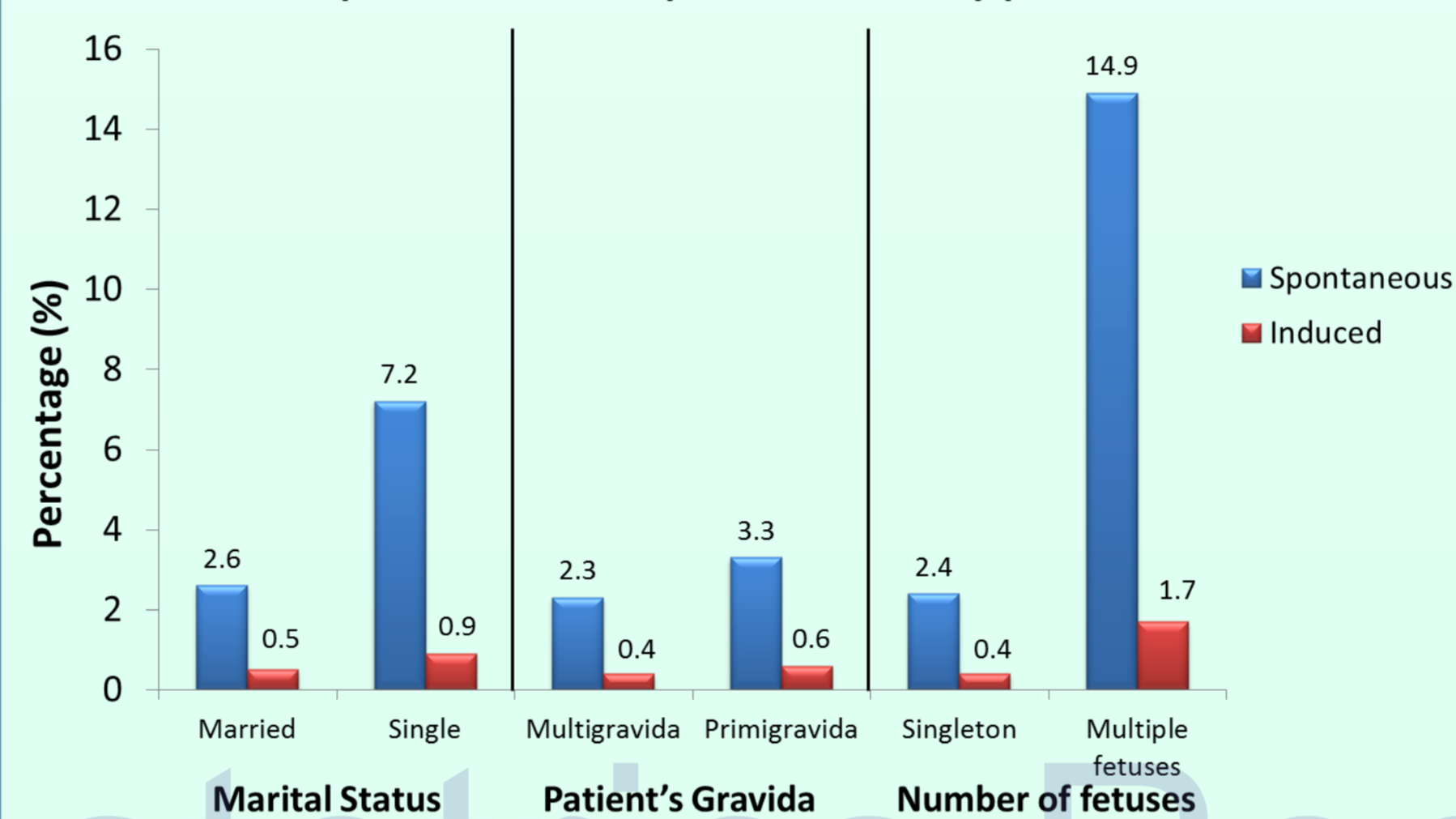


RESULTS & DISCUSSIONS

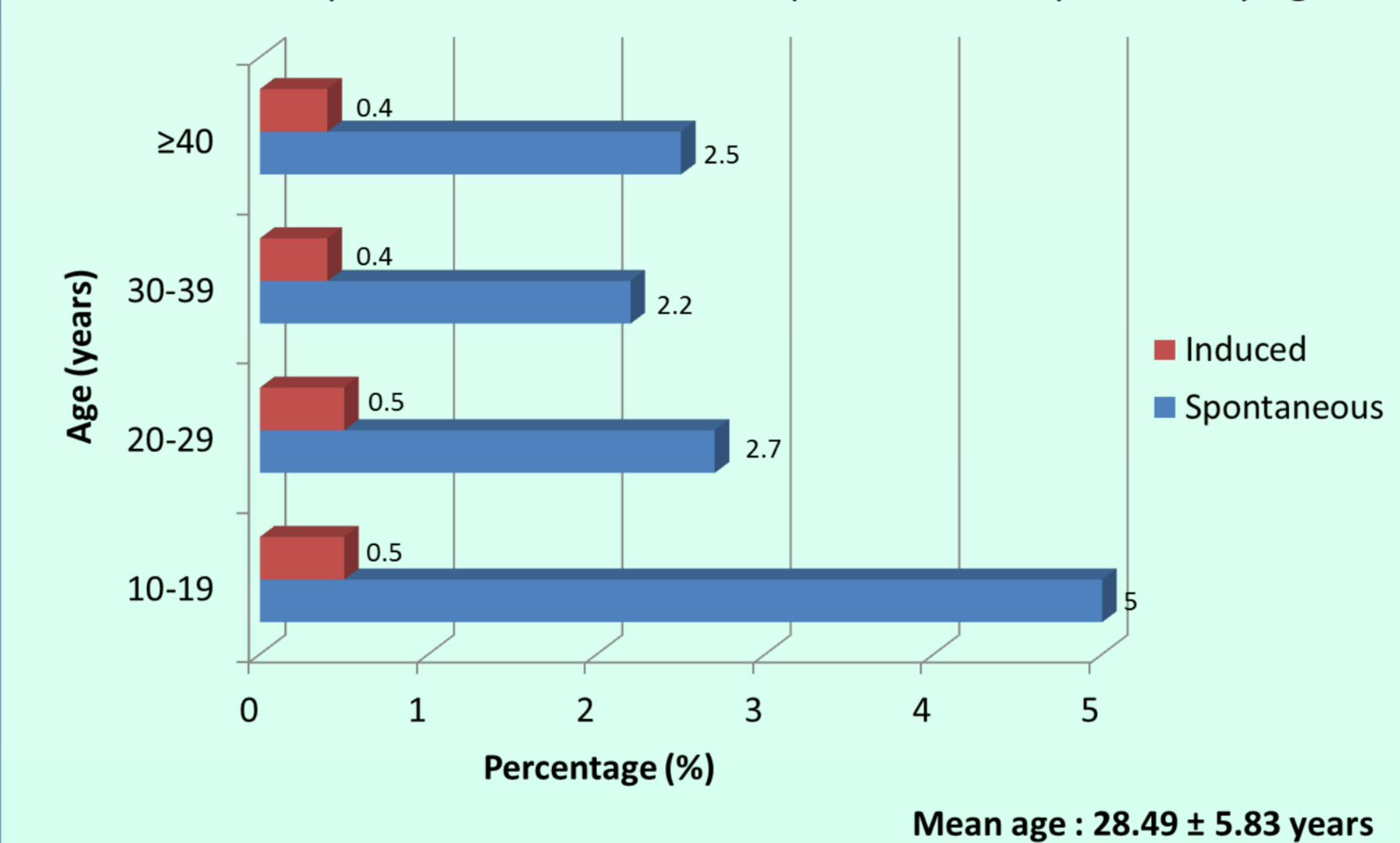
Distribution of patients by types of deliveries



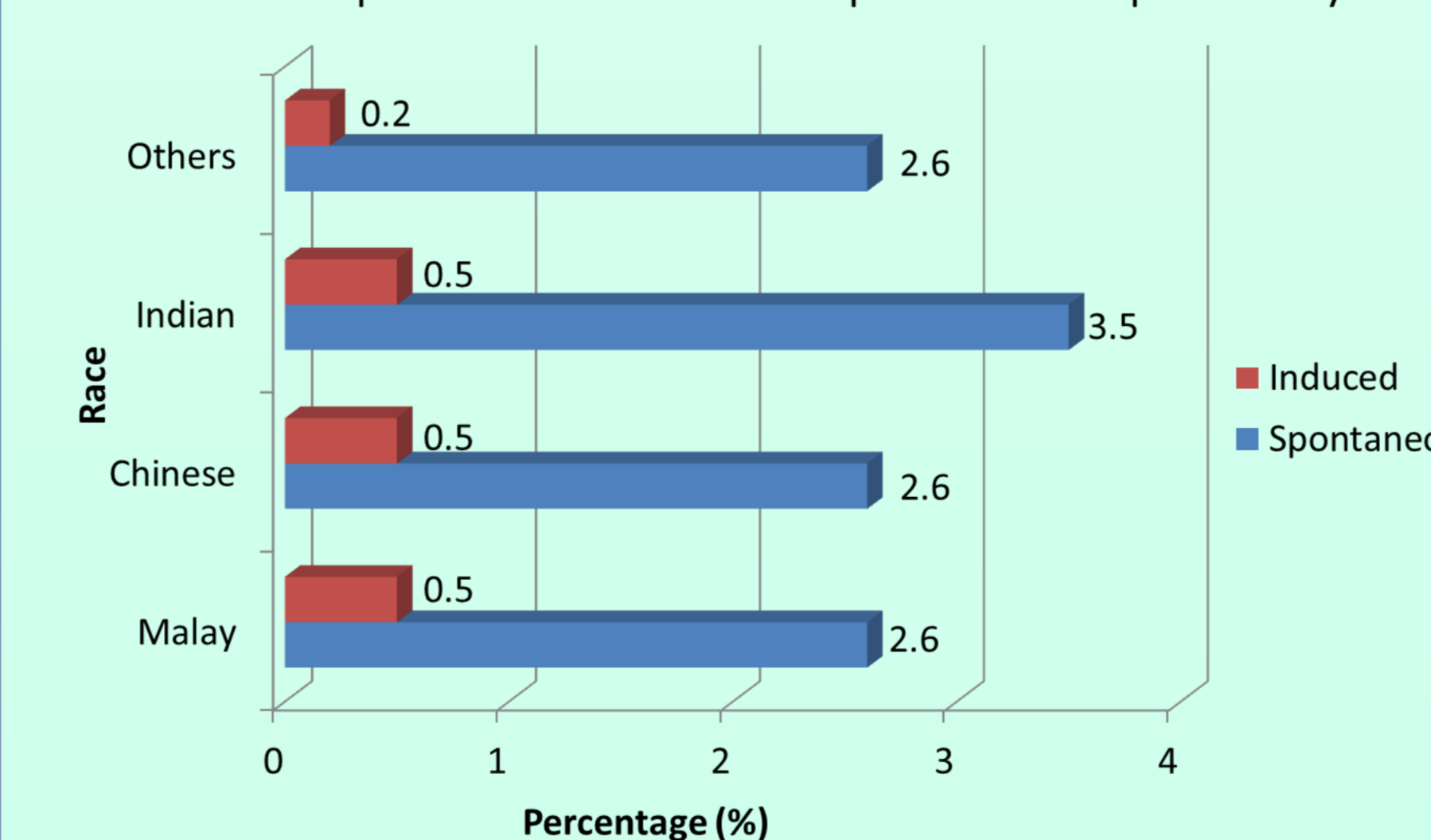
Distribution of spontaneous and preterm labor by patient's characteristics



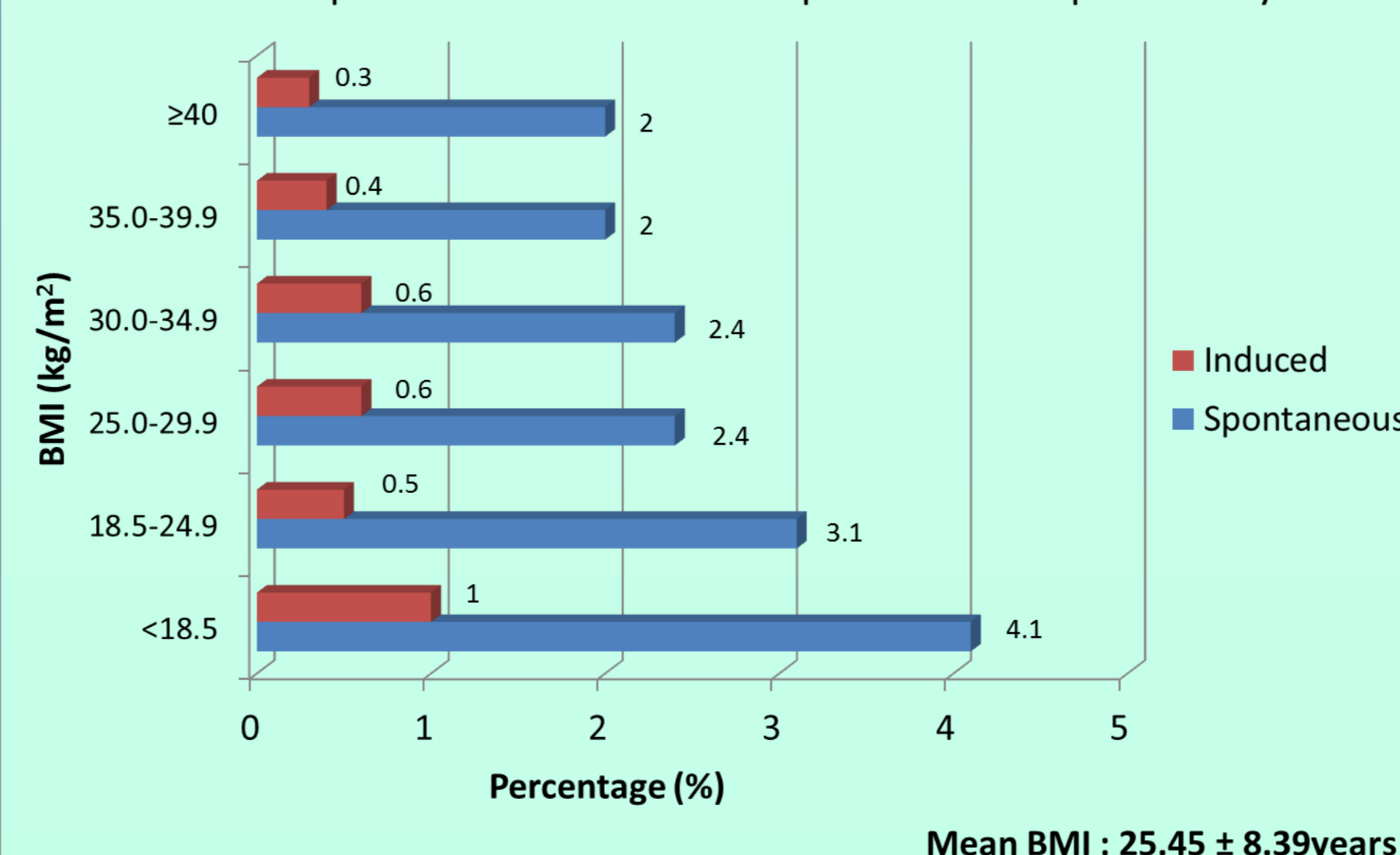
Distribution of spontaneous and induced preterm labor patients by age



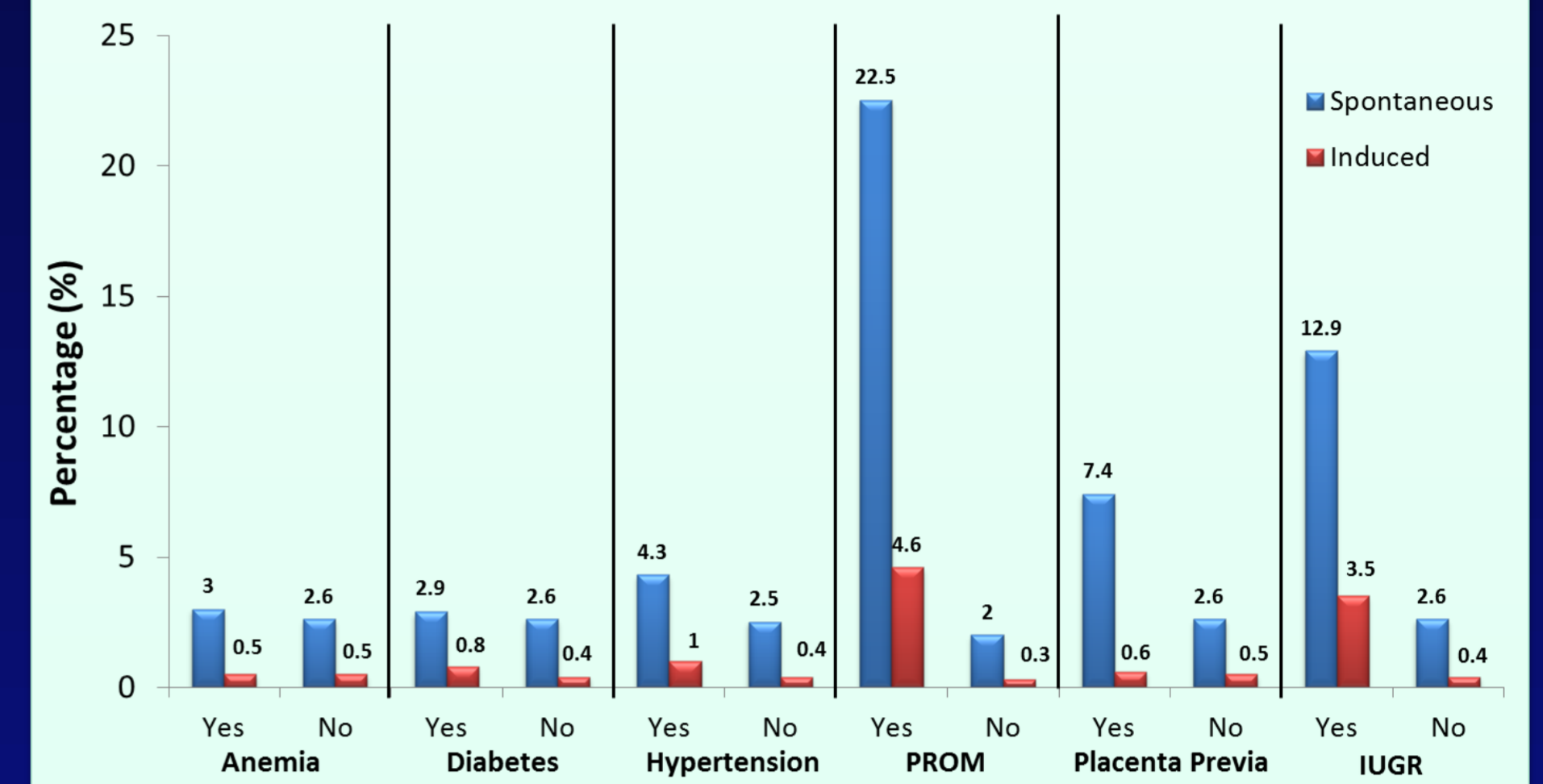
Distribution of spontaneous and induced preterm labor patients by race



Distribution of spontaneous and induced preterm labor patients by BMI



Distribution of spontaneous and preterm labor by patient's medical conditions



Risk factors for preterm labor

Characteristics	Association with spontaneous preterm labor OR (95% CI)	Association with induced preterm labor OR (95% CI)
Risk factors: individual, socio-economic and behavioral		
Young mother (<19 years)	1.498 (1.196, 1.878)*	0.929 (0.525, 1.646)
Single mother	1.942 (1.439, 2.621)*	1.446 (0.693, 3.014)
Minorities (Race)	1.015 (0.840, 1.228)	0.580 (0.354, 0.949)*
Underweight mother	1.340 (1.110, 1.617)*	1.758 (1.214, 2.540)*
Gynecological and obstetric history		
Previous Preterm Delivery	7.604 (5.989, 9.656)*	2.821 (1.501, 5.301)*
Previous Caesarean Section	1.272 (1.063, 1.524)*	0.652 (0.416, 1.021)
PROM	13.807 (12.024, 15.856)*	14.518 (11.119, 18.955)*
Placenta Previa	4.225 (2.688, 6.640)*	1.728 (0.423, 7.058)
IUGR	5.721 (4.090, 8.001)*	8.277 (4.723, 14.506)*
Anemia	0.875 (0.771, 0.992)*	0.937 (0.715, 1.228)
Diabetes	1.036 (0.874, 1.227)	1.631 (1.201, 2.215)*
Hypertension	1.731 (1.436, 2.087)*	1.918 (1.352, 2.721)*
Multiple fetus	8.291 (6.840, 10.050)*	4.543 (2.905, 7.105)*
Primigravida	1.253 (1.093, 1.437)*	1.202 (0.913, 1.583)*

Predictors for spontaneous preterm labor after adjusted

Characteristics	Association with spontaneous preterm labor aOR (95% CI)
PROM	13.8 (12.0, 15.9)
Multiple fetuses	8.3 (5.9, 10.1)
Previous preterm labor	7.6 (6.0, 9.7)
IUGR	5.8 (4.1, 8.1)
Placenta previa	4.2 (2.7, 6.6)
Hypertension	1.7 (1.4, 2.1)
Single mother	1.9 (1.4, 2.6)
Younger age mother (<19 years)	1.5 (1.2, 1.9)
Primigravida	1.3 (1.1, 1.4)
Underweight mother	1.3 (1.1, 1.6)
Previous caesarean section	1.3 (1.1, 1.5)

Predictors for induced preterm labor after adjusted

Characteristics	Association with induced preterm labor aOR (95% CI)
PROM	14.5 (11.2, 18.8)
IUGR	7.6 (4.4, 13.4)
Multiple fetuses	4.3 (2.7, 6.7)
Hypertension	1.9 (1.3, 2.7)
Previous preterm labor	2.5 (1.4, 4.6)
Underweight mother	1.7 (1.1, 2.5)
Diabetes Mellitus	1.5 (1.1, 1.9)

Medical conditions such as premature rupture of membrane (PROM), intra-uterine growth retardation (IUGR), and hypertension were found to be significant predictors of induced preterm labor and spontaneous preterm labor.

Socio-demographic factors such as younger age mother, singles, underweight, and first pregnancy are predictors for spontaneous preterm labor.

CONCLUSION

There were some common predictors for spontaneous and induced preterm labor due to difficulty in defining those two types or pointing to the specific causes for each. However, induced preterm labor were mainly associated with maternal complications while various factors could predict spontaneous preterm labor. Limitation of this is the predictors analysed were limited to the data collected by NOR within a given time frame.

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