PREVALENCE AND RISK FACTORS OF PREGNANCY LOSS IN MALAYSIA

2nd International Conference on Demography and Population Studies
15-18 June 2015, Athens, Greece

Irwan Nadzif Mahpul
National Population and Family Development Board, Malaysia
Introduction
Malaysian Population at a Glance

QUICK FACTS

- **Area**: 330,290 sq. km
- **Population**: 30.3 millions
- **Population density**: 86 per sq. km
- **Annual population growth rate**: 1.2%
- **Age structure (%):**
  - 0-14 years: 27.6
  - 15-64 years: 67.3
  - 65+ years: 5.1
- **Mean age at 1st marriage (years):**
  - Male: 28.0 ; Female: 25.7
- **Crude birth rate**: 17.2 /1,000 pop.
- **Crude death rate**: 4.7 /1,000 pop.
- **Stillbirth rate**: 4.3 / 1,000 births
- **Total fertility rate**: 2.1
- **Life expectancy (years):**
  - Male: 72.5 ; Female: 77.2
Previous Studies

<table>
<thead>
<tr>
<th>Stillbirth is defined as a fetal death that occurred in the late period of pregnancy (WHO, 2001; Hajian-Tilaki et al., 2014; Avachat, S. S. et al., 2015).</th>
<th>Stillbirth rate has declined worldwide by 14% from 22.1 stillbirths per 1,000 births in 1995 to 18.9 stillbirths per 1,000 births in 2009. The greatest reductions occurred in the Western Pacific Region with almost 4% annual decline between 1995 and 2009 (WHO, 2011).</th>
<th>Stillbirth rates have increased or plateau in some other countries after decades experiencing a steady decline (Joseph, K. S., et al. (2013).</th>
<th>The risk of pregnancy loss include maternal age, previous pregnancy loss, multi parity and infertility (Maconochie, N., et al., 2007; Hajian-Tilaki et al., 2014).</th>
</tr>
</thead>
<tbody>
<tr>
<td>Miscarriage is defined as a fetal death that occurred in the early period of pregnancy (WHO, 2000).</td>
<td>A similar situation happened in Malaysia as the stillbirth rate had increased from 3.9 per 1,000 total births in 2000 to 4.5 per 1,000 in 2009 (DOS, 2003 &amp; 2010).</td>
<td>80% of miscarriages occurred in the first 12 weeks (Regan, L., &amp; Rai, R., 2000).</td>
<td>Rates and risk factors of pregnancy loss may vary with respect to social, cultural and racial status (Sutan, R., 2009; Singh, S. et al., 2010; Drysdale, H. et al., 2012; Hajian-Tilaki et al., 2014).</td>
</tr>
</tbody>
</table>
Objective

To study the prevalence and risk factors of pregnancy loss in Malaysia.
Data and Methods

Using data from the **Fifth Malaysian Population and Family Survey (MPFS-5)**, a nationally representative cross-sectional survey conducted by the **National Population and Family Development Board (NPFDB), Malaysia** in 2014.

This paper analysed birth outcomes of 27,604 pregnancies among 7,066 ever married women interviewed in the MPFS-5.

The multiple logistic regression model was used to compare risks of non-live births relative to the live births.

**Dependent variable**

Pregnancy outcome: 0 = live birth and 1 = non-live birth.

**Independent variables**

1. Ethnicity
2. Education
3. Age at 1st marriage
4. Number of previous live births
5. Number of previous non-live births.
## Descriptive Analysis

Number and percentage of non-live birth.

<table>
<thead>
<tr>
<th></th>
<th>01 Ethnicity</th>
<th>03 Age at 1st marriage</th>
<th>05 Previous non-live birth</th>
<th>04 Previous live birth</th>
<th>06 Total</th>
</tr>
</thead>
<tbody>
<tr>
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</tr>
<tr>
<td></td>
<td>Ethnicity</td>
<td></td>
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<tr>
<td></td>
<td>Malay</td>
<td>2,059 (10.9%)</td>
<td>&lt; 20 years : 752 (8.4%)</td>
<td>0 : 2,171 (9.2%)</td>
<td>2,979 (10.8%)</td>
</tr>
<tr>
<td></td>
<td>Chinese</td>
<td>260 (10.6%)</td>
<td>20-29 years : 2,062 (11.7%)</td>
<td>1 : 626 (18.0%)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Indian</td>
<td>282 (16.2%)</td>
<td>30+ years : 165 (15.8%)</td>
<td>2 : 149 (27.0%)</td>
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</tr>
<tr>
<td></td>
<td>Others</td>
<td>378 (8.5%)</td>
<td></td>
<td>3+ : 33 (33.7%)</td>
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<td></td>
<td>Education</td>
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<tr>
<td></td>
<td>No edu.</td>
<td>96 (6.4%)</td>
<td>0 : 844 (10.8%)</td>
<td>0 : 2,171 (9.2%)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Primary</td>
<td>567 (9.2%)</td>
<td>1 : 618 (9.3%)</td>
<td>1 : 626 (18.0%)</td>
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</tr>
<tr>
<td></td>
<td>Second</td>
<td>1,797 (11.4%)</td>
<td>2 : 570 (10.9%)</td>
<td>2 : 149 (27.0%)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Tertiary</td>
<td>519 (12.7%)</td>
<td>3 : 402 (11.6%)</td>
<td>3 : 402 (11.6%)</td>
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<td></td>
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<td></td>
<td>4+ : 545 (12.2%)</td>
<td>4+ : 545 (12.2%)</td>
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</tbody>
</table>
## Correlation Test Result

Correlational result between independent variables and dependent variable.

<table>
<thead>
<tr>
<th>Variables</th>
<th>Pearson Chi-Square</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethnicity</td>
<td>75.733**</td>
</tr>
<tr>
<td>Education</td>
<td>68.434**</td>
</tr>
<tr>
<td>Age at first marriage</td>
<td>98.051**</td>
</tr>
<tr>
<td>Previous live birth</td>
<td>26.776**</td>
</tr>
<tr>
<td>Previous non-live birth</td>
<td>448.760**</td>
</tr>
</tbody>
</table>

Significance : ** $\rho < 0.01$. 
Multiple Logistic Regression Result
Adjusted Odds Ratio and 95% Confidence Interval.

01 Ethnicity
Malay : 1.00
Chinese : 0.99 (0.86, 1.13)
Indian : 1.60 (1.39, 1.84)**
Others : 0.90 (0.80, 1.01)

02 Education
No edu. : 1.00
Primary : 1.42 (1.13, 1.78)**
Second : 1.65 (1.33, 2.06)**
Tertiary : 1.77 (1.40, 2.24)**

03 Age at 1st marriage
< 20 years : 1.00
20-29 years : 1.32 (1.20, 1.45)**
30+ years : 1.95 (1.61, 2.36)**

04 Previous live birth
0 : 1.00
1 : 0.81 (0.72, 0.90)**
2 : 0.96 (0.86, 1.08)
3 : 1.11 (0.97, 1.26)
4+ : 1.32 (1.17, 1.49)**

05 Previous non-live birth
0 : 1.00
1 : 2.06 (1.87, 2.27)**
2 : 3.48 (2.86, 4.23)**
3+ : 4.53 (2.96, 6.94)**
Conclusion

Key findings
The risk of pregnancy loss is highest among Indian, followed by Malay and Chinese. The risk of pregnancy loss increases with: level of education; age at 1st marriage; and number of previous non-live births.

Limitation
Not covering a complete set of risk factors of pregnancy loss especially the medical risk factors and time-varying socio-demographic risk factors which have been shown in many studies to be responsible for a significant proportion of pregnancy loss.
Thank You

irwan@lppkn.gov.my