Objective

- To explore the pregnancy outcomes in nurses and nursing assistants.
- To determine work-related risk factors that associated with preterm delivery.

Materials and Methods

- A retrospective descriptive study.
- Conducted from 361 nurses and nursing assistants: 572 pregnancies.
  - Aged between 18 to 60 years.
  - Be pregnant while working at Srinagarind hospital.
- All of these data were collected from June 2013 to August 2014.

Sample Size

\[
\frac{n = \frac{z^2 \times P(1-P)}{d^2}}{1 - \alpha} = 425
\]

\[P = \text{prevalence} = 0.112 \text{ from previous study in Turkey}\]

Introduction

- The pregnancy outcomes influence by multiple factors.
- Physical activity can be significantly associated with preterm delivery.
- Nurses and Nursing assistants remain working throughout their pregnancies.

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Materials and Methods

Process

Describe the study details to participants

Research assistant

Obtained informed consents from the eligible pregnant women

Research assistant

Data collection

Materials and Methods

Data collection

B. Working conditions

• History of heavy lifting, long standing (>4hrs, ≤4hrs)
• Average hours worked per week (>40hrs/wk, ≤40hrs/wk)
• Hour worked per day (>8hrs/day, ≤8hrs/day)
• Shift works

Materials and Methods

Data collection

C. Pregnancy outcomes

• Preterm delivery
• Threatened abortion
• Preterm premature rupture of membrane (PPROM)
• Low birth weight
• Gestational hypertension
• Obstetrics procedures
• Prolonged admission (>3 days)

Materials and Methods

Questionnaire

A. Baseline Characteristics
B. Working conditions
C. Pregnancy outcomes

Materials and Methods

Data collection

A. Baseline Characteristics

• Age, Parity
• Body weight, height
• Underlying diseases
• Smoking status, alcohol and exposure with agents

Ethics

Approved by The Khon Kaen University Ethics Committee for Human Research
Materials and Methods

Statistical Analysis

- Prevalence rate with 95% confidence interval.
- Risk factors of preterm delivery.
  - χ² or Fisher exact test.
  - Multiple logistic regression analyse.

Materials and Methods

361 nurses and nursing assistants with 658 pregnancies were enrolled.
86 pregnancies were excluded due to abortion.
572 pregnancies were analyzed.

Results

Pregnancy outcomes

Cesarean section
28.97%; 95%CI, 25.30%-32.84%

Preterm delivery
21.15%; 95%CI, 17.79%-24.51%

Results

Table 3: The univariate and multivariate analyses for preterm delivery and risk factors

<table>
<thead>
<tr>
<th>Variable</th>
<th>Category</th>
<th>Number (%)</th>
<th>Univariate OR (95%CI)</th>
<th>Multivariate OR (95%CI)</th>
<th>P-value</th>
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</thead>
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<td>Underlying disease</td>
<td>Yes</td>
<td>35/501 (7.0)</td>
<td>1.80 (1.05, 3.03)</td>
<td>0.046</td>
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<tr>
<td></td>
<td>No</td>
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<td>0.99 (0.58, 1.68)</td>
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<tr>
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<td>2.64 (1.25-5.59)</td>
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<td>Duration of work</td>
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<td>26/135 (19.2)</td>
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<tr>
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<td>Day</td>
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<tr>
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<td>History of work</td>
<td>Night</td>
<td>4/57 (7.0)</td>
<td>0.46 (0.12-1.73)</td>
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<tr>
<td></td>
<td>Day</td>
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<td>Worked shifts</td>
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<tr>
<td></td>
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<td>53/426 (12.5)</td>
<td>0.99 (0.58, 1.68)</td>
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<tr>
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Clinical characteristics

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<tr>
<th>Variable</th>
<th>Mean weight (kg)</th>
<th>Mean height (cm)</th>
<th>BMI</th>
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<td></td>
<td>65.40 ± 8.99</td>
<td>155.77 ± 8.49</td>
<td>22.8</td>
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</table>

Discussion

The most common pregnancy outcome in nurses and nursing assistants is cesarean section (28.97%).
- Not really different from previous Thai population’s survey (23.25%) and rate in general population in Srinagarind hospital.
- Comparing to Ortayli N(17%), our rate of cesarean section is higher.

1 Taneepanichskul S. Health survey on maternal and perinatal health. Surveillance center on health and public health problem. 2011
Discussion

The rising of cesarean section more than nurses in Turkey may because
- country-specific standard practice and profitability.


Discussion

The second common is preterm delivery compared to other studies.1,2,3
- Our participants have more average hours worked per week and more night duty.
- General Thai population (11.2%)4, the prevalence of preterm delivery in our study is also higher.


Acknowledgment

§ This study was granted by Faculty of Medicine, Khon Kaen University, Thailand.

§ Chumnan Kietpeerakool, M.D. and Kaewjai Thepsuthammarat for technical support and data analysis.

§ Karen Welker for language correction.

Limitations

- Self-reported questionnaire affected by attention to detail by participants.
- Recall bias but our participants are health workers, they are more aware of past health events than general population.
- Our study was not adjusted for previous preterm delivery and fetal anomaly.

Conclusions

- Cesarean section was the most common pregnancy outcome.
- Shift work was the most significant work-related risk factor for preterm delivery.

Thank You For Your Attention