MATERNAL OCCUPATION AND LOW BIRTH WEIGHT

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6th Croatian Congress on Occupational Health with International Participation
ESSENTIALS FOR WORKERS' HEALTH
Women in the workforce

- Increased number of employed women in last four decades
- Broader range of occupations
- More women works during pregnancy
Occupation and pregnancy

- Adverse effects on fetal development

- Reproductive wastage
  - Early pregnancy loss
  - Spontaneous abortion

- Genetic defects
  - Single gene defects
  - Chromosomal abnormalities

- Congenital malformations

- Low birth weight
  - Intrauterine growth retardation
  - Preterm delivery

- Mortality
  - Late fetal deaths
  - Perinatal mortality
  - Infant mortality

- Functional disorders
  - Developmental disabilities
  - Behavioural disorders

- Malignancies
Occupation and pregnancy

- Ways in which the occupation affects pregnancy:
  - Direct exposure of harmful agents through the placenta
  - Exposure from living in close proximity to an industrial workplace
  - Exposure to parents clothing
Low birth weight (LBW)

- Birth weight < 2500 g

- Small for gestational age (SGA)
  2 SD below mean weight for certain gestation in one population
Investigation of MEDLINE

- MeSH terms:
  - (low birth weight OR pregnancy complication)
  - AND
  - (occupation OR profession)

- Within the last 10 years
Results: specific occupation

- Higher rate of low birth weight:

- Street vendors (Ghana, 2014)
  177 g reduction in birth weight
  35% increased risk of LBW

Hairdressers (Sweden, 2005)
Significant lower birth weight for full time workers
Results: specific occupation

- No difference in incidence of LBW:
  - Hairdressers, Spain, 2010 (higher rate of spontaneous abortion)
  - Floriculture workers, Spain, 2007
  - Nurses, Finland, 2008
  - Daycare employees, Finland, 2010
  - Farmworkers, USA, 2011
  - Cosmetologist, USA, 2009
Results: Population-based studies

- **Finland, 2007**: self administered questionnaire

- **Prevalence of LBW**
  - *Factory, mining and construction*: 6%
  - *Farming and forestry*: 5%
  - *Housewives*: 1.5%
Results: Population-based studies

- **Sweden, 2010**: WomMed III database
- Increased risk for SGA births were found in mothers who worked as:
  - Textile workers
  - *Mechanics and iron and metalware workers*
  - *Electrical, wood, beverage manufacture workers*
  - *Glass, ceramic and tile workers*
  - *Packer, loaders and warehouse workers*
Results: Population–based studies

Korea, 2013: National birth registry

- Highest rates of LBW were observed with maternal work in:
  - Agricultural
  - Forestry and
  - Fishery jobs
Results: Population-based studies

- **Connecticut USA, 2008**: Birth registry and mail survey

- Risk for LBW was increased in
  - *Service workers*
  - *Textile workers*
Results: Population–based studies

- California USA, 2013: case–control study

Risk of LBW was significantly increased for mothers employed in:
- Transportation and moving operations
- Food preparation and serving
- Production occupations
Results: Population–based studies

- **Spain, 2009: National birth registry**

- **Prevalence of LBW:**
  - Women employed in service sector 3.5%
  - Manual work in industry and construction 3.4
  - Professional women 2.5%
Several maternal occupations carry a significantly higher risk for LBW compared to other maternal occupations or non-working mothers.
Conclusion

- Street vendors, Hairdressers
- Factory, mining and construction workers
- Mechanics and iron and metalware workers
- Electrical, wood, beverage manufacture workers
- Glass, ceramic and tile workers
- Packer, loaders and warehouse workers
- Agricultural, Forestry, Fishery workers
- Service, Textile workers
- Transportation and moving operations
- Food preparation and serving
- Production occupations
Conclusion

- We found only six population based studies
- Their results were very diverse
- They used different kind of occupation classifications
- Studies were mostly retrospective
Conclusion

- We still need to explain etiology of these complications
- LBW is just one of the pregnancy complication
Conclusion

An ounce of prevention is worth a pound of cure.
-- Benjamin Franklin
Thank you for your attention!