

10019-Nina Kotlyarova  
New Environmental Society

Women's Health. Different aspects of Women's Health Problems in Azerbaijan.

Azerbaijan is a small country in Eastern Europe, with GDP of 470\$ per capita. Until 1991 it was part of former USSR. When Azerbaijan gained its independence, the economy, social sphere and health care all collapsed. Due to lack of capital the state can not provide an adequate health care as it used to do before. As a result health conditions and illness rates became significantly worse.

My survey was made in different areas of Women's Health.

Since 1991 the birth rate dropped by 50% and abortion rate doubled. Women feel unsecured and do not want to have children. There is an increase of infant and maternal mortality. According to this survey the majority of Azerbaijan women do not use contraceptives because of contraceptive's high cost and poor knowledge in this area. The most common birth control method is abortion. In average, a woman has 3-5 abortions per her life-time, but in some cases as many as 20-30.

Life expectancy for women remains low, but death rate is higher than in other European countries.

The majority suffers of poverty, having a salary of 20\$. According to the same survey, Azerbaijan women have low milk and meat consumption, which are the main sources of protein. Under-nutrition causes a number of negative health consequences : as unwanted weight loss, fatigue, irritability and inability to concentrate, frequent colds, etc. Pregnant women who are undernourished have low-birth weight babies and the babies delay in their development. The majority of women do not consume even 2/3 of the nutrients they need to stay healthy. In addition, poor hygienic and sub-standard food conditions exist. Cattle are bred and their meat is sold without adequate control.

Women's Health gets highly effected by unavailability of proper medical aid, modern diagnostic technology and medicine due to cost.

The rates of such diseases as cardiovascular, respiratory, oncological and gynecological are very high, much higher than during the USSR period. Financial and social insecurities cause a high percentage of mental illnesses, especially among refugee women.

Unprotected sex leads to a high number of sexually transmitted diseases (venereal and AIDS), despite high abortion rates.

Exposure to environmental risk factors such as: biological pathogens, poor housing, unsafe water, inadequate sanitation and biomass fuel pollution all significantly impact Women's Health. This effect is especially high in refugee camps, next to industrial areas and main roads.

This survey contains detail information of all issues outlined here.

Conclusions: The problem of Women's Health in Azerbaijan can be solved only by improving the Health care standards, increasing living standards and overcoming poverty. Fortunately Az. has rich natural resources and great potential to become a country with a strong economy, high life standards and proper health care.

**10121- Risk Factors for Female Infertility in an Agricultural Region.** Greenlee AR<sup>1</sup>, Arbuckle TE<sup>2</sup>, Chyou P-H<sup>1</sup>. <sup>1</sup>Marshfield Medical Research Foundation, Marshfield, WI; <sup>2</sup>Health Surveillance and Epidemiology Division, Health Canada, Ottawa, Ontario, Canada.

**Introduction:** Farm workers and farm residents are exposed to a variety of physical, biological and chemical hazards; however, relatively few studies have examined the relationship of agricultural exposures and fertility outcomes. This project was a matched case-control study designed to retrospectively examine the effects of working or residing in an agricultural setting on a woman's risk for infertility.

**Methods:** Cases were women, 18-35 years old, who had not achieved pregnancy after 12 or more months of regular, unprotected intercourse and were seeking infertility treatment at the Marshfield Clinic or Wausau Medical Center in central Wisconsin. Controls were pregnant women who had conceived in less than 12 months of trying and were matched to cases based on age. Recruitment of cases and controls depended on study participation of their respective male spouse/partners. Information on occupational, residential, health and lifestyle exposures as well as a history of pesticide use was collected by questionnaire. Statistical analysis of 322 case-control pairs and their spouse/partners was carried out using conditional logistic regression and adjusted for household income, maternal level of education, hours of passive smoke exposure, time spent reviewing exposure lists, paternal age, weight pattern in adult life and number of sexual partners.

**Results:** Mixing and applying of herbicides and using fungicides during the 2-year period prior to attempting pregnancy was associated with an elevated risk of infertility (crude odds ratio (OR) = 2.3; 95% CI: 0.9 – 6.1, and OR = 4.0; 95% CI: 1.1 – 14.2, respectively). However, women residing on a farm, ranch or in a rural area were at lower risk of infertility. Certain lifestyle behaviors such as alcohol consumption (OR = 1.8; 95% CI: 1.2 - 2.5), exposure to passive smoke (OR = 1.8; 95% CI: 1.2 - 2.5), steady weight gain during adult life (OR = 3.5; 95% CI: 2.0 - 6.1), having a male partner  $\geq$  41 yr (OR = 4.5; 95% CI: 1.2 - 16.3) or a male partner self-reporting arrhythmia (OR = 2.8; 95% CI: 1.0 - 7.8) were identified as risk factors for female infertility. Women working in occupations with exposures to excessive heat, paints or varnishes were weakly associated with the risk of infertility (OR = 1.7; 95% CI: 1.0 - 2.8; and OR = 1.5; 95% CI: 1.0 - 2.0, respectively).

**Conclusions:** The results of this exploratory study suggest that exposure to pesticides, excessive heat, paints and varnishes and certain lifestyle choices are capable of elevating the risk of female infertility. Identification of hazards on the job and around the home will assist with developing evidence-based recommendations for safeguarding reproductive health.

## 10500-Occupational risk factors for asthma in former domestic cleaning women

M. Medina, J.P. Zock, J.M. Antó, M. Kogevinas, J. Sunyer.

Respiratory and Environmental Health Research Unit, Municipal Institute of Medical Research, Barcelona, Spain.

Previous studies in Spain have demonstrated an association between home cleaning work and asthma, being strongest among women who had left the home cleaning job. We aimed to investigate risk factors for asthma related to past home cleaning jobs. A case-control study was performed among former domestic cleaning women, recruited from a community-based study among women aged 30 to 65 years living in a community in the Barcelona metropolitan area. The study population included 175 cases that had reported asthma symptoms or medication in the last year, and 368 controls without a history of chronic respiratory symptoms. A telephone interview was performed including questions about work characteristics in past home cleaning jobs. Exposures were defined on the basis of tasks performed and products used almost always during work. An event suggestive of Reactive Airways Dysfunction Syndrome (RADS) was defined as an accidental mixing of products leading to the inhalation of a large amount of gases or fumes, resulting in respiratory symptoms within 24 hours after the accident. The associations between potential risk factors and asthma were evaluated using multiple logistic regression analyses with adjustment for age category, smoking status and level of education. The distribution of age and smoking status was fairly similar for cases and controls. The average duration of home cleaning work was 16.1 and 13.5 years in cases and controls, respectively (Student's t-test;  $p < 0.05$ ). Several specific cleaning activities and cleaning products were positively associated with asthma. The most important independent factors included the regular use of oven cleaning sprays (Odds Ratio (OR) 2.9; 95% confidence interval (CI) 1.2 to 7.1), polishing of furniture or floors (OR 2.0; CI 1.1 to 3.7) and washing clothes (OR 1.7; CI 1.1 to 2.5). Any history of a 'RADS event' was more prevalent among cases (31%) as compared to controls (16%); the adjusted OR was 2.3; CI 1.5 to 3.6. We conclude that irritants and other exposures in former home cleaning work may induce persistent asthma symptoms. Our findings strongly suggest that the excess risk of asthma among former domestic cleaning women is due to specific occupational exposures that are similar to the ones associated with asthma among current cleaners. The reasons why asthma symptoms persist after leaving the cleaning job remain unclear but are consistent with findings in other types of occupational asthma.

## 10551-Physical activity and breast cancer risk among premenopausal women in Germany

Karen Steindorf<sup>1</sup>, Martina Schmidt<sup>1</sup>, Silke Kropp<sup>2</sup> and Jenny Chang-Claude<sup>2</sup>

<sup>1</sup>Unit of Environmental Epidemiology, German Cancer Research Center, Heidelberg, Germany

<sup>2</sup>Division of Clinical Epidemiology, German Cancer Research Center, Heidelberg, Germany

Recent studies suggest that menopausal status is an important factor in the relation of physical activity and breast cancer risk. A population-based case-control study of 360 incident premenopausal breast cancer cases and 886 age-matched controls was conducted in Germany in 1999-2000. Physical activity was assessed for adolescence (age 12-19 years) and young adulthood (age 20-30 years) by reporting the frequency, duration and intensity of walking, cycling, household and sport activities. In addition, lifetime occupational activities were assessed. Analyses were based on the different self-reported dimensions of physical activity as well as on the derived metabolic equivalent (MET) values. Beyond standard descriptive summary statistics conditional logistic regression models were used to obtain risk estimates. Comparing the most extreme activity levels (highest versus lowest quartiles) no association between total recreational and non-recreational physical activity and premenopausal breast cancer was found. The adjusted odds ratio was 0.94 (95% confidence interval (CI) 0.65-1.35) for women who reported activity levels that were in the highest quartile compared with women at the lowest quartile. Comparing the highest versus the lowest quartiles separately for the specific types of physical activity we did not find any effect for occupational physical activity, household activities, walking, and sports. For physical activity via cycling as transportation mean, we found statistically significant decreasing risks with increasing cycling activity levels. The risk for women who reported highest cycling activities was reduced with an adjusted risk estimate of 0.66 (95% CI 0.45-0.97). Looking at comparisons of moderately high activity with low activity we found a significant protective effect for total recreational and non-recreational physical activity (adjusted odds ratio of 0.68, 95% CI 0.46-0.99). This study indicates that the protective effect of physical activity on breast cancer risk is less pronounced in premenopausal women than in postmenopausal women, and that for premenopausal women the protective impact on the breast cancer risk might already be existent or might even be more pronounced at moderate physical activity levels.

11025-TITLE: Pulmonary function of rural women of Tamilnadu, India -links to exposures from bio-fuel combustion.

AUTHORS: R Padmavathi<sup>1</sup>, Sambandam Sankar<sup>2</sup>, Kalpana Balakrishnan<sup>2</sup>, Vijayalakshmi Thanasekaraan<sup>3</sup>

AFFILIATIONS:(1) Department of Physiology (2) Department of Environmental Health and Engineering (3) Department of Chest & TB, Sri Ramachandra Medical College & Research Institute, Chennai, India

OBJECTIVES: In rural India, 90% of the primary energy use is accounted by bio-fuels such as wood, dung and agricultural wastes. Combustion of these fuels in poorly ventilated kitchens leads to the release of very high levels of indoor air pollutants including respirable particulates, gases and toxic pollutants including benzene and polycyclic aromatic hydrocarbons. Exposure to these pollutants has also been shown in many recent studies to be causally linked to several health effects especially in women who cook with these fuels and young children. However, very few quantitative exposure studies relating directly to pulmonary function of women cooks are available in India. The present study was undertaken to quantify exposures to indoor air pollution associated with combustion of bio-fuels, using respirable particulate matter as an indicator pollutant as well as assess pulmonary function of women involved in cooking. To our knowledge, this is one of the first such studies in the Southern Indian region.

METHODS: 200 women cooks of rural Tamilnadu, India, using various bio-fuels were selected through simple random sampling. Exposures during cooking windows were assessed through personal samplers worn by women and were taken as surrogates of 24-hour exposures as these contribute the most to daily average exposures (established through an independent study by the same investigators). Respirable dusts were collected and analyzed according to NIOSH protocol 0600. A detailed history was obtained and clinical examination, spirometric assessments were carried out simultaneously on these women. Women with prior history of tuberculosis were excluded from pulmonary function assessment. Pulmonary function values were correlated with the exposure parameter defined as (Personal Exposures while cooking) \* (Years of involvement in cooking) and expressed as microgram years.

RESULTS: Personal exposures ranged from around 400 $\mu\text{g}/\text{m}^3$  to around 5000 $\mu\text{g}/\text{m}^3$  with a mean of  $1136 \pm 879\mu\text{g}/\text{m}^3$  during cooking depending on the type of fuel. Amongst bio-fuels, agricultural wastes resulted in the highest personal exposures. Obstructive disorders were the most prevalent (21%) followed by ARI (18%) and pulmonary TB (5%). Age adjusted pulmonary function values (FVC (L):  $2.17 \pm 0.46$ ; FEV<sub>1</sub> (L):  $1.69 \pm 0.36$ ; PEF (L/sec):  $4.06 \pm 1.02$ ) were significantly lower than established norms for south Indian women. Pulmonary functions declined linearly with increasing levels and duration (years) of exposure { $r = -0.59^*(\text{FVC})$ ;  $-0.59^*(\text{FEV}_1)$  and  $-0.54^*(\text{PEF})$ .

CONCLUSIONS: This is one of the first studies in South India to present preliminary quantitative relationships between exposures to respirable particulate matter and pulmonary function in rural women. The results of this study with other exposure assessment studies would facilitate the strengthening of the preliminary exposure-response relationships emerging specifically for indoor air pollutants in developing countries.