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CHILDHOOD OBESITY: INFLUENCE OF PERINATAL DETERMINANTS AND FAMILY SOCIO-ECONOMIC CONTEXT. *Graça Aparício, Madalena Cunha, João Duarte, Anabela Pereira (Polytechnic Institute of Viseu - Health School (Portugal), Viseu Portugal)

Background: The foundations of a healthy life are structured during prenatal period and gain consistency during the first five years of life, being the child growth and development highly influenced by their familiar context. This study aimed to analyse the influence of obstetric and perinatal determinants and parental socioeconomics context in the children's overweight. Methods: Cross-sectional and observational study comprised of 792 preschool children, average age = 4,39 years old (SD = 0,91) and their parents, living in centre of Portugal. Children's anthropometric evaluation and nutritional classification was based on NCHS reference (CDC 2000), obstetric and perinatal classification on WHO recommendations. Results: Globally 66% were normal weight, 31.3% overweight (12.4% obesity) and 2.7% low-weight, the differences shown to be independent from age and gender of the children. The interplay of obstetric determinants (age, mother's weight at the end of pregnancy, and gestational diabetes), and perinatal (gestational age, birth weight and breastfeeding time) revealed that, only birth weight was significantly correlate with overweight children, namely that 7.4% of overweight children were born large ($\chi^2 = 21.130$, $p = 0.002$), implying that a higher birth weight was associated with increased risk of overweight in childhood with a probability greater than 8 times (OR = 8.486, 95% CI = 2.443 - 29.483) ($\chi^2 = 13.636$, $p = 0.000$). From socio-economic variables (parental age, education and household income), only the mother's age, specifically the youngest, assumes significant effect on children's overweight ($\chi^2 = 8{,}683$; $p = 0{,}034$). Conclusions: Results suggest significant effect of birth weight and mother's age, the youngest ones, on the development of overweight. In periodic health monitoring, become of major importance the valorisation of biologic and familiar's risk factors related to overweight children and to consider intervention programs family-centred.

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PATHWAY ANALYSIS FOR HEALTHY WORKER SURVIVOR BIAS IN A COHORT OF ACTIVELY EMPLOYED ALUMINUM FABRICATION WORKERS. *Sadie Costello, Daniel M Brown, S Katharine Hammond, Mark R Cullen, Ellen A Eisen (University of California, Berkeley CA 94720)

Healthy worker survivor bias arises when there is a time-varying confounder on the causal pathway. In a cohort of 8290 actively employed aluminum fabrication workers followed from 1998 to 2009, we conducted a pathway analysis for $PM_{2.5}$ exposure and incident ischemic heart disease (IHD) focused on two risk factors potentially on the causal pathway: incident hypertension and diabetes. For bias to occur, the three necessary associations are A) prior exposure and the risk factors, B) the risk factors and subsequent exposure, and C) the risk factors and outcome. There were 449 cases of IHD, 2402 cases of hypertension and 859 cases of diabetes. Modeled as a continuous variable (mg/m^3), prior $PM_{2.5}$ predicted hypertension (adjusted odds ratio (OR): 1.04 (95% confidence Interval (CI): 1.01, 1.06)) but not diabetes. Hypertension diagnosis was associated with a 0.01 mg/m^3 reduction (standard error 0.006) and diabetes diagnosis was associated with a 0.02 mg/m^3 (standard error 0.01) reduction in subsequent $PM_{2.5}$ exposure. Hypertension and diabetes were both strong risk factors for incident IHD: the OR for hypertension was 1.96 (CI: 1.60, 2.40) and for diabetes was 2.60 (CI: 2.02, 3.26). Evidence suggests that hypertension, but not diabetes, may be on the causal pathway between $PM_{2.5}$ exposure and IHD. There is modest evidence that hypertension may also be a confounder, thus g-methods are needed to reduce healthy worker survivor bias. In addition, both risk factors predicted leaving work before the age of 60 (censoring) with an OR of 1.36 (CI: 1.19, 1.94) and 1.30 (CI: 1.07, 1.57), for hypertension and diabetes, respectively. To address this potential selection bias, we will need to incorporate censoring weights in all future analyses of $PM_{2.5}$ exposure and IHD.

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LEFT TRUNCATION BIAS IN A COHORT OF ACTIVELY EMPLOYED ALUMINUM FABRICATION WORKERS. *Sadie Costello, Daniel M Brown, S Katharine Hammond, Mark R Cullen, Ellen A Eisen (University of California, Berkeley CA 94720)

Left truncation occurs when subjects who otherwise meet entry criteria do not remain observable for a later start of follow-up. In occupational studies, those who left work before the start of follow up may have been more susceptible to the health effects of exposure than those who stayed. Including only those who remained at work until the start of follow up can therefore result in a downward bias. We compared associations between cumulative exposure to $PM_{2.5}$ and incidence of ischemic heart disease (IHD) in the full cohort of male fabrication workers followed from 1996 to 2009 and the subset hired after the start of follow up. There were 387 cases (mean age 54) among the full cohort of 6213 workers employed before or after 1996 and 50 cases (mean age 50) among the 1764 (28%) hired after 1996. There was no association between cumulative $PM_{2.5}$ and IHD in the full cohort; adjusted hazard ratios (HR) ranged from 1.13 in the lowest to 0.96 in the highest exposed quintile with all confidence intervals including the null. By contrast, when we excluded subjects hired before start of follow-up, we observed a monotonic increase in the HR across quartiles of cumulative exposure. Relative to the reference group (<0.70 mg/m^3-years), the HRs were 1.11, 1.24 and 1.78, though all confidence intervals included the null. An increase of one in the natural log of $PM_{2.5}$ was associated with a 17% increase in IHD (95% confidence interval: 0.93, 1.47) among those hired after the start of follow up. Although statistical power was compromised by the smaller sample size, younger age and shorter work tenure, restricting to workers hired after the start of follow up appeared to reduce left truncation bias and suggested an increased risk of IHD with increased cumulative exposure.

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RACIAL DISPARITIES IN SHORT SLEEP DURATION BY OCCUPATION AND INDUSTRY. *Chandra Jackson, Susan Redline, Ichiro Kawachi, Frank Hu (Harvard School of Public Health, Boston MA 02215)

Background: Short sleep, associated with increased morbidity and mortality, has been shown to vary by industry and occupation among US workers, but few studies have investigated Black-White differences in these relationships. Objective: To examine racial/ethnic differences in short sleep duration by industry of employment, we used data from a nationally representative sample of US adults reporting short sleep (n = 41,088) in the National Health Interview Survey from 2004-2011. Methods: Short sleep duration was self reported and categorized as ≤6 hours of usual sleep in a 24 hour period. We estimated prevalence ratios for short sleep duration in Blacks compared to Whites for each industry using Poisson regression models with robust variance estimators adjusting for age, sex, body mass index, and other covariates. Results: Participants' mean age was 49 years, 49% were women, 16% were black, and 24% (25 for whites; 18 for blacks) had at least a college education. Blacks were more likely to report short sleep duration than whites (37 vs. 28%). Compared to whites, adjusted short sleep duration was significantly more prevalent in blacks employed in the following industries: Finances/Information/Real estate (prevalence ratio (PR) = 1.51 [95% confidence interval (CI): 1.35-1.70]), Professional/Administrative/Management (PR = 1.47 [95% CI: 1.31-1.64]), Education (PR = 1.44 [95% CI: 1.28-1.63]), Public administration/Other services (PR = 1.33 [95% CI: 1.21-1.46]), Health care and social services (PR = 1.22 [95% CI: 1.12-1.34]), and Manufacturing/Construction (PR = 1.15 [95% CI: 1.08-1.23]). Short sleep was not different between Blacks and Whites in Retail (PR = 0.99) and Accommodation and food services (PR = 1.00). Conclusions: Black-White differences in short sleep duration varied by industry of occupation, and these findings suggest the need for further investigation of racial/ethnic differences in the work-sleep relationship.