

## O8 - Comunicación Oral/Oral communication

Salud infantil II

Child health II

Jueves 2 de Octubre / Thursday 2, October  
11:30:00 a/to 13:30:00

Moderador/Chairperson:  
Charles Florey and Marisa Rebagliato

### THE PARADOX BETWEEN PETS AT HOME AND ASTHMA AND ALLERGY IN CHILDREN FROM VALENCIA (SPAIN)

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**Introduction:** Exposure to environmental factors at home, such as cats, dogs, birds, etc. (1), and the characteristics of the house and child's bedroom, have been proposed as factors closely related to the development of asthma symptoms in children (2).

**Objectives:** A study is made of the pets in children's homes and their possible role in relation to asthma, allergy and atopic dermatitis.

**Material and Methods:** The study was carried out among children 8 years old, randomly selected from the second grade Primary Education setting in 65 schools in Valencia (Spain). The centers comprised both public and private schools. A child was considered asthmatic, allergic or with atopic dermatitis if their parents answered affirmatively to the ISAAC questionnaire (International Study of Asthma and Allergies in Childhood)(3). The odds ratios and 95% confidence intervals were calculated. Multivariate linear regression analyses were carried to study the possible relationship between asthma, allergy and atopic dermatitis and the different study variables.

**Results:** An OR=0.38 and OR=0.56 was observed for asthma and allergy in children who had cats in their first year of life, versus OR=0.70 and OR=0.68 among those who had cats in the last year. Children who had dogs in their first year of life had a risk of asthma and allergic rhinoconjunctivitis of OR=0.59 and OR=0.81, respectively. This risk was a little greater than in the case of those who had dogs in the last year: OR=0.93 and OR=0.90, respectively. The multivariate analyses yielded a statistically significant inverse relationship between the prevalence of diagnosed asthma and the presence of a cat in the house in the first year of life ( $p<0.001$ ).

**Conclusions:** A statistically significant inverse relationship was observed between children who had pets or farm animals in their house and asthma, allergic rhinoconjunctivitis and atopic dermatitis. This may be due to tolerance to allergens from childhood. If contact with domestic and farm animals took place only in the last year, the opposite tendency was observed, in favor of symptoms of asthma.

#### References

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2. Custovic A, Murray CS, Gore RB, Woodcock A. Controlling indoor allergens. *Ann Allergy Asthma Immunol* 2002 May; 88(5):432-41; quiz 442-3.
3. Strachan DP. Steering Committee of the ISAAC. Worldwide variations in prevalence of symptoms of allergic rhinoconjunctivitis in children: The International Study of Asthma and Allergies in Childhood (ISAAC). *Pediatr Allergy Immunol* 1997; 8:161-76.

### TRENDS AND PATTERNS OF INFANT MORTALITY IN EUROPEAN COUNTRIES

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**Introduction:** During the last decades, Europe experienced intense geo-political transformations, with warfare and the emergence of newly independent states in its central and eastern portion, and the unification of richer western countries. The present study aims to contribute to document the health status of European countries during this complex process, by describing current levels and trends of infant mortality rate. We also aimed at exploring different hypotheses of association between infant mortality and recent modifications of socio-economic conditions and the provision of health services.

**Methods:** The World Health Organisation Regional Office for Europe provided primary information for the country-area profile of infant mortality rates (IMR), and indices assessing socio-economic status and the provision of health services. The estimation of trends and current levels for the IMR used the auto regression procedure of exact maximum-likelihood estimation for time-series analysis. The appraisal of association between variables used OLS regression analysis.

**Results:** Central and Eastern Europe (CEE) and Newly Independent States (NIS) presented a poorer profile of child survival than the European Union (EU), Nordic Countries (NC) and Switzerland (SW), with a threefold average for current levels of IMR. Moreover, CEE and NIS figures for this outcome decreased at a near 20% lower rate during the last twenty years. An improved profile of socio-economic status associated with lower figures of infant mortality in both sets of countries. However, the drop of rates in EU and NC was faster in poorer countries, indicating that they benefited from the recent geo-political process, the inverse occurring in CEE and NIS. Health services contributed to reduce health inequalities, by hastening the decrease of infant mortality.

**Conclusions:** The main finding reported here is the contribution of health programmes to alleviate the unfavourable impact of economic standings on child survival. The importance of fostering the provision of health services cannot be overemphasised; it is a source of expectation for achieving the UNICEF's World Summit for Children Goal 1 of reducing by 33% infant and under-5 mortality until 2010. The present observation of higher levels concurrent with slower decreasing trends of IMR in CEE and NIS countries than in EU, NC and SW relies on an excessive number of preventable infant deaths each year, and points out as enlarging the gap between richer and poorer European regions. This charge is unacceptable, and overcoming it must remain a focus of international public health concern and policies.

### DETERMINANTS OF CHANGES IN BODY-MASS-INDEX IN CHILDREN BETWEEN THE AGES OF 4 AND 6 YEARS

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**Introduction:** Childhood overweight is an increasing problem in developed countries. Many cross-sectional studies examined associations between different factors and the prevalence of overweight, but few studies have looked for determinants of changes in Body-Mass-Index (BMI). We investigated the influence of different determinants on changes in BMI in children between the ages of 4 and 6 years.

**Methods:** 2159 children participating in the compulsory school entrance health examination in 2002 in the city of Stuttgart, Southern Germany, were included (response rate 70.2%) and had their height and weight measured. The height and weight of these children at the age of 4 years were abstracted from medical records, the children's screening books, which were available for 1817 children. Information on possible determinants of overweight was collected by parental questionnaire. The relative age- and sex-specific BMI was calculated for both examination dates (SDS<sub>LMS</sub> method) and multiple linear regression models were applied.

**Results:** The prevalence of overweight ( $\geq 90$ . percentile) differed significantly between children of non-German mother tongue and German mother tongue (crude OR 3.52, 95% CI: 2.70 to 4.60) and there was evidence for effect modification between breast feeding duration and mother tongue. Therefore all analysis were conducted stratified for mother tongue (31% non-German, 69% German). In the multiple linear regression model the following variables had a significant influence ( $p<0.05$ ) on changes in relative BMI. For German children: paternal BMI and duration of TV watching (e.g. regression coefficient 0.38 (95% CI: 0.16 to 0.60) for >2 hours daily vs. <1 hour daily) were positively, duration of breast feeding was inversely associated with relative change in BMI. For non-German children: parental BMI and duration of TV watching were positively related to relative changes in BMI while duration of breast feeding (e.g. regression coefficient -0.27 (95% CI: -0.47 to -0.08) for 4-6 months vs. < 2 months) was associated with a decrease in relative BMI to a greater extent than in German children. Other potential determinants of overweight like maternal smoking during pregnancy, low or high birth weight or educational status have no influence on changes in relative BMI between the ages of 4 and 6 years.

**Conclusions:** Changes in age- and sex-specific BMI were associated with factors which are potentially amenable to prevention.

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### BREAST-FEEDING AND RISK OF HOSPITALIZATION FOR ALL CAUSES AND FEVER OF UNKNOWN ORIGIN

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**Background:** Breast-feeding has shown to give a reduction in the risk of hospitalization due to respiratory tract infections and gastrointestinal conditions during the first two years of life. No previous report on the association of breast-feeding with fever of unknown origin (FUO) has been found. This is the main objective of this report.

**Methods:** A case-reference study in Cantabria (northern Spain) was carried out. Cases (n = 336) were hospitalized children aged less than 24 months at University of Cantabria Hospital. Newborns with congenital malformations were excluded. Cases were selected using 40% random sampling of all children up to 24 months old admitted to the hospital: a 40% random sample of days was generated with the EpiInfo 6.0 (CDC, Atlanta, USA) software and all admissions in those days were included. The reference was a 1:1 matched (by time from delivery to admission) sample of children from mothers delivering at the same hospital. Information on breast-feeding, socioeconomic variables and employment were obtained. Odds ratios (ORs), their 95% confidence intervals (CIs), and mean length of breast-feeding were estimated after adjustment for confounding variables.

**Results:** In the reference population, shorter duration of breast-feeding was associated with smoking, lower educational level, and less privileged social strata. The frequency of breast-feeding was higher in the reference than in the cases, 82.3% vs 75.6% (p=0.023). Significant negative trends were noted in univariate analyses between the length of breast-feeding and both all admission causes and FUO, although the statistical significance was lost after adjusting for confounding variables (educational level, social class, smoking, and use of incubator after delivery). Breast-feeding was dichotomized according to different cut-off levels (see figure 1). The maximum protection (minimum odds ratio) for all causes was obtained for breast-feeding longer than two months and stronger for children up to six months of age than for older infants. For FUO the lowest ORs were for durations of breast-feeding longer than 120 days, although these figures were not statistically significant. The adjusted mean length of breast-feeding was shorter in hospitalized children  $\leq 6$  months old for both all admission causes (40.6  $\pm$  5.4 vs 99.5  $\pm$  5.4, p < 0.001) and FUO (40.8  $\pm$  12.4 vs 91.7  $\pm$  12.4, p = 0.006).

**Conclusion:** Breast-feeding time is shorter in hospitalized children for both all admission causes and FUO.

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### BODY MASS INDEX AND DEPRESSIVE SYMPTOMS IN ADOLESCENTS

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**Introduction:** Both obesity and depression are increasingly prevalent conditions, commonly associated, and relating with several other serious adult disease that begin expressing themselves relatively early in life. The aim of this study was to estimate the association between depression and body mass index (BMI) in a community sample of adolescents.

**Participants and methods:** In a cross sectional survey we evaluated 5383 adolescents (53.1% females) aged 12 to 18 years, randomly selected among student residents in Viseu, Portugal. Participants completed a self-administered questionnaire. BMI (kg/m<sup>2</sup>) was calculated from self-reported height and weight and participants grouped according to the sample distribution quartiles. Depressive symptoms were assessed using the Portuguese validated version of Beck Depression Inventory for Adolescents using the 15 points score as the cut-off to consider depression).

**Results:** The prevalence of depression in the total sample was 18.7%, significantly higher in females (31.1 vs. 15.3, p<0.01) with symptoms mean scores increasing with age (p for trend <0.001). After adjusting for sex, age, chronic diseases and social-class, there was an increasing risk of depression with increasing quartiles of BMI (2nd quartile OR=1.3, 95% CI 1.0-1.6; 3rd quartile OR =1.2, 95% CI 0.9-1.5; and 4th quartile OR=1.4, 95% CI 1.1-1.8).

**Conclusion:** We found a high prevalence of depression in adolescents that was significantly associated with increasing body mass index. This finding suggest that as shown in the adult population obesity has a negative impact on psychosocial factors.

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### NEONATAL MORTALITY AND SOCIO-ECONOMIC STATUS: A CASE-CONTROL STUDY

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**Introduction:** There is growing interest in the comparison of outcomes between health care providers. To carry out fair comparisons it is important to allow for any underlying morbidity over which the provider has had no influence. In neonatal care there is conflicting evidence whether maternal socio-economic deprivation is a predictor of neonatal mortality. It is also unclear whether any possible association is solely because such babies tend to be born earlier and smaller. This paper aims to investigate evidence for an independent association between maternal socio-economic deprivation and neonatal death.

**Methods:** The Leicestershire Perinatal Mortality Study is a case-control study of perinatal death occurring to women resident in Leicestershire, UK. From 1992 this study was extended to include all neonatal deaths. In this paper data on all singleton control subjects and neonatal deaths from 1996 to 2000 were used. Socio-economic status was defined in two ways. First, using social class derived from maternal interview: the highest of either parent where they were cohabiting and the mother's alone if the parents were not cohabiting. Second, using the Department of the Environment Deprivation Score (DoE) calculated for each mother's area of residence at electoral Ward level. Mortality ratios (observed/expected) were calculated for each social class, or quintile of DoE score, both unadjusted and adjusted for gestation and weight at birth. The DoE score was also investigated as a continuous variable in a logistic model.

**Results:** 1470 births were identified of whom 1427 had complete data recorded: 483 deaths within 28 days of birth and 944 controls. Unadjusted mortality ratios for each social class ranged from 0.86 to 1.93 (p-value for no difference between groups = 0.0003) with a trend of higher neonatal mortality to mothers of lower social class. After adjustment for gestation and weight at birth the mortality ratios ranged from 0.97 to 1.07 (p = 0.85). There was little evidence of a relationship between DoE score and neonatal mortality when entered in a logistic regression model (p = 0.062). The mortality ratios for the quintiles of DoE score ranged from 0.86 to 1.11, with only very weak evidence of a trend towards higher mortality with higher deprivation, and from 0.91 to 1.11 after adjustment for gestation and weight at birth.

**Conclusions:** There is strong evidence that neonatal mortality is associated with social class derived from the mother's individual circumstances. However, there is no evidence that this is in addition to the effect of prematurity and low birth weight. The association between neonatal mortality and the DoE Score, a small-area derived deprivation score, is much weaker. When comparing neonatal mortality, adjustment for gestation and weight at birth adequately adjusts for socio-economic differences.

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### RISK FACTORS FOR LOW COGNITIVE FUNCTION AT AGE 5: A FOLLOW-UP STUDY IN NORTH-EAST BRAZIL

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**Introduction:** It has been recognised that environments with low psychoeducational stimulation and poor levels of family organization together with poor hygiene, unfavourable living conditions and malnutrition intensify the risk factors for child development increasing the probability of low cognitive performance. This study aims to examine the associations between personal, environmental, and health-related factors during infancy and cognitive function in later childhood. The first objective was to evaluate the effect of socioeconomic factors, environmental characteristics, quality of home stimulation, and health (including birth weight, diarrhoea, parasitic infections, and anthropometric measures) on cognitive function at 18-42 months; the second, to evaluate the effect of all these variables together with pre-school education on cognitive function at five years.

**Methods:** A cohort study was carried out in Salvador, northeast Brazil (population 2,211,539). A health baseline survey (1997-8) collected data on diarrhoea, stool samples, nutritional status and environmental sanitation. In 1999 two measurements were applied, the Home Inventory, and Bayley Scale for children below 42 months. In 2001 346 children completed their pre-school assessment with the WPPSI-R Scale. One way analysis of variance (ANOVA) was used for analysis of the WPPSI-R scores, and a multivariate ANOVA model to identify factors independently associated with cognitive score at age 5 according to the conceptual framework.

**Results:** The 346 children had a mean score on cognitive function of 96.4 (SD 11.2) below 42 months, and 82.6 points (SD 13.7) at age 5. Children living with families with income up to 1 minimum local wage had a lower mean score on the WPPSI-R test than those born to a family with a higher income. Mean scores showed an improvement as family ownership capacity improved. Lack of paternal income corresponded to lower mean WPPSI-R scores, as did a home with significant overcrowding. Children whose households lacked basic sanitary infrastructure, in neighborhoods with poor sanitation, had lower mean scores than those living in houses and areas of good sanitation. Low birth-weight also gave lower mean scores. The malnourished according to anthropometric measures had lower mean WPPSI-R scores as did children with over 7 days/diarrhoea/year and positive helminth infection. Mean WPPSI-R scores were lower for children previously under low home psychosocial stimulation, with low cognitive function during infancy, as well as for children not attending day-care or kindergarten.

**Conclusion:** Low socio-economic conditions, low birth-weight, stunting, bad quality sanitation, and low levels of home stimulation and cognitive function during infancy, together with no kindergarten attendance, has a strong adverse effect on cognitive function in later childhood.