

prevalence cross-product ratio, and that the latter is the measure that consistently yields an appropriate measure of the Incidence Density Ratio. Debating the role of multivariate regression models in cross-sectional studies, we contend that such models should be avoided when the structuring assumptions for causal inference do not hold. Nevertheless, if these assumptions are reasonably met, it is the logistic regression model that is best suited for this task as it provides a suitable estimate of the Incidence Density Ratio.

Discussion In closing, we discuss the (un)favourable arguments raised in the literature in the light of our findings.

P1-499 PREVALENCE AND ASSOCIATED FACTORS OF ANTERIOR OPEN BITE IN CHILDREN AGED 2–5 YEARS-OLD

doi:10.1136/jech.2011.142976g.87

¹C R da S Castro,* ²M I P Vianna, ²M C T Cangussu. ¹Instituto de Saúde Coletiva, Salvador, Bahia, Brazil; ²Faculdade de Odontologia da UFBA, Salvador, Bahia, Brazil

Introduction The anterior open bite is the malocclusion with major aesthetic and functional commitments, besides it has a more complex treatment. In order to prevent its occurrence, it's fundamental to know the risk factors.

Objective To estimate the prevalence of anterior open bite and to examine the effects of some variables such as behaviours and those related to familiar environment.

Methods A cross-sectional study was carried out in Salvador—BA, in 2005. A sample of 362 children aged between 2 and 5 years old was examined and their relatives were interviewed in their homes. The Self-Report Questionnaire (SQR-20) and CAGE scale (adaptated) were used to report psychiatric symptoms and alcoholism in the family. Descriptive analysis was proceeded. In order to verify the associations, OR, adjusted for the independent variables, was estimated through of non-conditional logistic regression.

Results The prevalence of anterior open bite was 19.19%. Results of the logistic analysis showed a positive association between non-nutritive sucking habits and anterior open bite in children ($OR_{\text{ajust}}=7.44$; 95% CI 3.30 to 16.74). There was no association between familiar dysfunction, referred to the presence of psychiatric symptoms and alcoholism in the family, and anterior open bite.

Conclusions Results suggest that there is, in the population studied, an association between sucking behaviour and the occurrence of anterior open bite in children. The knowledge of malocclusion in the primary dentition favours preventive actions to reduce the prevalence of malocclusion.

P1-500 INFLUENCE OF DURATION OF BREASTFEEDING IN THE ORAL HABITS AND MALOCCLUSION IN CHILDREN

doi:10.1136/jech.2011.142976g.88

¹C R da S Castro,* ²M I P Vianna, ³A de Carvalho Gonçalves. ¹Instituto de Saúde Coletiva, Salvador, Bahia, Brazil; ²Faculdade de Odontologia da UFBA, Salvador, Bahia, Brazil; ³Universidade Federal do Rio Grande do Sul, Porto Alegre, Rio Grande do Sul, Brazil

Breast milk is the ideal food for infants by providing nutrients for their development and providing protection against infection, in addition to the psychological benefits arising from the mother-child involvement. Regarding oral health, breastfeeding has been associated with adequate growth and development of the maxillo-mandibular. The objectives of this study was to investigate the association between duration of breastfeeding, harmful habits and malocclusion, as well as investigate the association between these habits and malocclusion. We conducted a cross-sectional study with children aged 2–5 years in areas covered by the PSF and PACS in the

city of Salvador, Bahia in 2005. We carried out the diagnosis of malocclusions in children and was administered to mothers, a questionnaire on breastfeeding duration and oral habits. We conducted a descriptive analysis of variables of interest and stratified crude associations were estimated by prevalence ratios and CIs at 95%, obtained by the Mantel-Haenszel method. The prevalence of malocclusion was 39.5%. Of children breastfed for <6 months, 74.2% had oral habits and 51.6% malocclusion. An association between short duration of breastfeeding and presence of deleterious sucking habits ($PR=1.97$, CI 1.59 to 2.45), as well as the occurrence of malocclusion ($PR=1.54$, CI 1.16 to 2.03). The association between sucking habits and malocclusion was statistically significant ($PR=2.31$, CI 1.67 to 3.22). We stress the importance of encouraging breastfeeding for over 6 months and discourage the use of pacifiers, aiming preventing the occurrence of malocclusions.

P1-501 FUNCTIONAL PERFORMANCE AMONG THE ELDERLY AND QUALITY OF URBAN LIFE IN BELO HORIZONTE, MINAS GERAIS, BRAZIL: A MULTILEVEL ANALYSIS

doi:10.1136/jech.2011.142976g.89

F R Ferreira,* C C César, M F Lima-Costa, V P Camargo, F A Proietti. UFMG, Belo Horizonte, Minas Gerais, Brazil

Introduction There is an increasing interest about the influence of the environment on people living in urban areas. Elderly are more vulnerable to changes in the physical and social environment associated to urbanisation. The neighbourhood has an important role in maintaining independence.

Methods We adopted the theoretical model of causal effects of neighbourhood on ageing of Glass & Balfour. The study included 1155 elderly (≥ 60 years) selected by random sampling. Response variable “functional performance” was developed based on the number of basic and instrumental activities of daily living (ADL) that the elderly found difficult to accomplish. Urban Quality of Life Index (UQLI) was used as the second-level variable. The UQLI domains assume values between zero and one (zero = worst situation; one = the best) Zero-inflated negative binomial multilevel regression model (ZINB Multilevel) was used in the statistical analysis.

Results Functional performance is influenced by urban infrastructure, one of the UQLI domains. Living in a neighbourhood with a infrastructure index ≥ 0.80 increased by 4.2 times the chance of the elderly to be independent when compared with those living in neighbourhoods with an index < 0.80 , after controlling for individual level variables. The interclass correlation coefficient for the second-level domain was 0.17, indicating that 17.0% of the variance in functional performance of the elderly may be explained by differences in the infrastructure of the BHMPU.

Conclusion Public intervention programs aiming an improvement in the performances of the elderly must take into account the contribution of urban infrastructure in the neighbourhood.

P1-502 PSYCHOSOCIAL FACTORS, MENOPAUSE CHARACTERISTICS, PHYSICAL AND MENTAL MORBIDITY AND THEIR ASSOCIATION WITH INSOMNIA COMPLAINTS AMONG WOMEN IN MENOPAUSE. THE PRÓ-SAÚDE STUDY

doi:10.1136/jech.2011.142976g.90

¹J R Robaina,* ¹C de Souza Lopes, ²L Rotenberg. ¹Universidade do Estado do Rio de Janeiro, Rio de Janeiro, Rio de Janeiro, Brazil; ²Fundação Oswaldo Cruz, Rio de Janeiro, Rio de Janeiro, Brazil

Menopausal women have a higher prevalence of insomnia. Despite the vast literature, several aspects are still controversial or have

not been sufficiently studied. Sectional analyses were conducted among menopausal employees ($n=486$), participating in a longitudinal study (the Pró-Saúde Study). Data on insomnia complaints (IC), menopause characteristics, self-report of physical morbidity medical diagnosis, common mental disorders (CMD), social support and stressful life events (SLE) were collected. Insomnia complaints were analysed as polytomic outcome (frequent, occasional and absent), and crude and adjusted ORs were calculated by multinomial logistic regression. Prevalences of frequent and occasional IC among women in menopause were 25.7% and 32.7%, respectively. Menopause characteristics were not associated with IC. Presence of CMD (GHQ-12) was strongly associated with frequent IC [OR=6.14 (95% CI 3.24 to 11.65)]. For occasional IC, values were lower [OR=2.98 (95% CI 1.59 to 5.57)], but still significant. All social support dimensions were associated with occasional IC, after adjustment, except for the intermediate tercile of total social support. The social support dimension associated with frequent IC after adjustment was "to have low total social support" [OR=2.46 (95% CI 1.33 to 4.56)], "to have low emotional support/information" [OR=2.31 (CI 95% 1.27 to 4.19)], and "to have low affective support/positive social interaction" [OR=2.21 (CI 95% 1.22 to 4.02)]. Our results warn of an important association among insomnia complaints and CMD and social support. These psychosocial factors can contribute to the onset of primary insomnia, a symptom that in general is not taken into consideration when the patient seeks for medical help.

P1-503 MENOPAUSE AND INSOMNIA IN THE PRÓ-SAÚDE STUDY: ASSESSING THE ROLE OF PSYCHOSOCIAL, SOCIO-ECONOMIC AND DEMOGRAPHIC FACTORS

doi:10.1136/jech.2011.142976g.91

¹J R Robaina,* ¹C de S Lopes, ²L Rotenberg. ¹Universidade do Estado do Rio de Janeiro, Rio de Janeiro, Rio de Janeiro, Brazil; ²Fundação Oswaldo Cruz, Rio de Janeiro, Rio de Janeiro, Brazil

Studies show that insomnia in menopause may be associated with psychological symptoms, which would reflect its association with depression and high levels of tension and stress. To estimate the prevalence of insomnia and to assess its association with menopausal status in a population of women, a cross-sectional study was conducted among employees of a university in Rio de Janeiro, participating in a longitudinal study (the Pró-Saúde Study) ($n=2189$), using a self-administered questionnaire to evaluate insomnia, menopausal status and other variables. Non-pregnant women who reported absence of menstruation were considered "in menopause". Insomnia was ranked as difficulty initiating sleep (DIS), difficulty maintaining sleep (DMS) and general insomnia complaints (GIC). Crude and adjusted ORs were calculated by multivariate logistic regression. Among women in menopause, prevalence of insomnia was 20.8% for difficulty initiating sleep, 21.8% for difficulty maintaining sleep, and 25.7% for general insomnia complaints. In the final model, adjusted by socio-economic and demographic variables, common mental disorder (CMD), stressful life event (SLE) and social support, all insomnia categories were associated with menopause. ORs were the following: for DIS OR=1.58 (95% CI 1.07 to 2.34); for DMS OR=1.61 (95% CI 1.08 to 2.41); and for GIC OR=1.68 (95% CI 1.15 to 2.43). These results are consistent with other studies, and show that menopause is significantly associated with the presence of insomnia, is independent of age, income, education, CMD, SLE and social support. The results of our study can help highlight the importance of managing/treating insomnia associated with menopause.

P1-504 DIETARY INTAKE AND ADEQUACY TO NUTRITIONAL RECOMMENDATIONS IN PREGNANT WOMEN IN A MEDITERRANEAN AREA. INMA-VALENCIA COHORT

doi:10.1136/jech.2011.142976g.92

¹C L Rodríguez-Bernal,* ²R Ramón, ¹M Murcia, ²J Quiles, ³J Vioque, ³E Navarrete, ²M Rebagliato, ¹F Ballester. ¹Centro Superior de Investigación en Salud Pública, Valencia, Spain; ²Dirección General de Salud Pública, Valencia, Spain; ³Universidad Miguel Hernández, Alicante, Spain

Introduction Maternal diet may be an important determinant of maternal and infant health outcomes. However, the nutritional status of pregnant women in the Spanish Mediterranean region has been scarcely studied.

Methods We studied 822 women from the INMA-Valencia cohort. Intakes from food and supplements in early pregnancy as well as adequacy to dietary recommendations were assessed according to maternal characteristics. Adequate intakes for food groups were estimated based on Spanish dietary guidelines. Intake inadequacy for nutrients was assessed using the Dietary Reference Intakes of the Institute of Medicine. Descriptive statistics of dietary intakes were reported. We contrasted the distribution and the adequacy of intake according to maternal characteristics by means of ANOVA, post-hoc tests and logistic regression.

Results Overall, more than 50% of the population studied had deficient intakes of cereals and legumes, carbohydrates, n-3 and n-6 fatty acids, and exceeded the recommendations for total fat intake. Prevalence of inadequacy for folate, iron and vitamin E from foods ranged from 99% to 70%. Younger and less educated women had lower intakes of vegetables, proteins and n-3 fatty acids and higher intakes of trans-fatty acids along with a greater prevalence of inadequacy for micronutrients. Spanish women showed lower intakes of fruits and carbohydrates and higher intakes of proteins, total fat, saturated fatty acids, MUFA and n-3 fatty acids compared to their foreign counterparts.

Conclusion Women in the studied area have inadequate intakes of several nutrients relevant during pregnancy. Besides age and education, origin is an important determinant of dietary intake and adequacy.

P1-505 CURRENT DIET VS DASH DIET ASSESSED BY FOOD FREQUENCY QUESTIONNAIRE USING FOOD GROUPS: AGREEMENT AMONG HYPERTENSIVE PATIENTS

doi:10.1136/jech.2011.142976g.93

¹S L Rossato,* ¹F Moselle, ¹F Guizonni, ^{1,2}L B Moreira, ^{1,2}S C Fuchs. ¹Universidade Federal do Rio Grande do Sul, Porto Alegre, Brazil; ²Hospital de Clínicas de Porto Alegre, Porto Alegre, Brazil

Introduction Dietary guidelines for hypertensive patients require methods able to identify food patterns and monitoring adherence, which could be based on a simplified Food Frequency Questionnaire (FFQ) for food groups.

Objective To develop a FFQ for food groups in order to easily recommend the DASH (Dietary Approach to Stop Hypertension) diet for hypertensive patients.

Methods A cross-sectional study was conducted among adults, aged 20 to 69 years, from a Hypertension clinic of a reference centre (Hospital de Clínicas de Porto Alegre), in southern Brazil. Data gathering using two sequential 24 h recalls (RA 24 h) were adopted to assess dietary intake. A list of food groups was generated, based on the DASH diet adapted to the southern Brazil population. A pilot study, including 30 individuals, was conducted to test the FFQ structure, consumption of food groups, two periods of recall, and pictures and wording for food items identification.

Results A sample of 127 hypertensive patients were interviewed at seven and 30 days, using a qualitative FFQ with 40 items aggregated