that meet this standard of blinding and placebo effects potentially affect the estimates. One example of a study where it was impossible to blind the participants is the Heating Housing and Health Study (HHHS). Here the intervention was the installation of a modern efficient heater in the participants’ homes.

**Methods**

Using data from the HHHS, we explored three different approaches to estimate the placebo effect: (1) Dummy outcome variables (where we examined variables similar to the real outcomes, on which the intervention is known to have no effect); (2) identifying variables that may indicate a high susceptibility to placebo effects; and (3) modelling the effects of measured intermediate variables (in the heating example the direct effect of the intervention should be associated with a rise in temperatures).

**Results**

Combining these approaches in a Bayesian framework we calculated estimates of the placebo effect and intervention effects across a range of outcome measures in the HHHS. The changes in the estimates of these intervention effects showed which results were likely to be affected by placebo effects. These findings agree well with our expectations.

**Conclusion**

With carefully chosen assumptions, it is possible to use data already collected and a Bayesian modelling approach to obtain informative estimates of likely placebo effects and hence provide better estimates of the true effects of an intervention in unblinded RCT’s.

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**P1-496**

**AN EXAMINATION OF THE PSYCHOMETRIC PROPERTIES OF THE GHQ-28 SUBSCALES IN A BI-ETHNIC ANTENATAL SAMPLE IN THE UK: PRELIMINARY RESULTS FROM THE BORN IN BRADFORD COHORT**

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1S Prady,* 2J Miles, 3L Fairley, 4K Bloom, 5S Gilbody, 6K Kiernan, 7K Pickett, 3P Raynor, 1J Wright. 1University of York, York, UK, 2Unaffiliated, USA, 3Bradford Institute of Health Research, Bradford, UK

**Introduction**

Born in Bradford is a large multi-ethnic birth cohort drawn from the North of England. As background to comparing mental health across our sample we conducted a confirmatory factor analysis (CFA) and invariance testing for each of the four-factor seven-item subscales of the GHQ-28 for a bi-ethnic subpopulation.

**Methods**

We examined data from White (N=2011) and Pakistani-origin (N=1516) women who responded to the GHQ-28 in English. We fitted a single factor model to data from each subscale to the White subpopulation and tested for invariance against the Pakistani women’s data. Where configural invariance was indicated for a proposed factor we followed a model generation strategy for each subpopulation and tested for invariance on this reduced item set.

**Results**

In general, the models gave poor fit. Fit was acceptable when we reduced the number of items from seven to four for the Somatic, Anxiety/Insomnia and Severe Depression subscales. The unmodified Social Dysfunction subscale fitted both groups adequately. After correcting for differential item functioning (Item 4, Felt ill) we found Pakistani women were more likely to have worse scores on the reduced Somatic subscale (d=0.10, p<0.001). They also had worse scores on the unmodified Social Dysfunction (d=0.08, p<0.001) and reduced Severe Depression subscales (d=0.14 p<0.001). Severe fit difficulties were observed for the Anxiety/Insomnia subscale.

**Conclusion**

The unmodified GHQ-28 subscales did not fit a CFA model well and modifications were needed to ensure measurement equivalence. Pakistani women in this preliminary dataset fared significantly worse on all measurable subscales than White women.

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**P1-497**

**SUPPORT AND ADMINISTRATION OF THE MULTI-SITE GLOBAL HEALTH INITIATIVE PROGRAM OF COMBATING NON-COMMUNICABLE CHRONIC CARDIOVASCULAR AND PULMONARY DISEASES IN DEVELOPING COUNTRIES**

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2H Z Qian,* 1R N N Dianis, 1W Lobach, 2J Bolognesi. 1Westat, Rockville, Maryland, USA; 2Vanderbilt University, Nashville, Tennessee, USA; 2Westat, Rockville, Maryland, USA

The National Heart, Lung and Blood Institute (NHLBI) teamed with United Health Group’s Chronic Disease Initiative (CDI) to reduce the burden of noncommunicable cardiovascular and pulmonary diseases (CVD) by building research and training capacities at 11 emerging Centers of Excellence (COEs) in Argentina, Bangladesh, China, Guatemala, India (Bangalore), India (New Delhi), Kenya, Peru, South Africa, Tunisia and the USA Mexico Border. To support diverse program needs and provide logistical expertise, Westat Company serves as the administrative coordinating center (ACC) for NHLBI’s Global Health Initiative (GHI). Maintaining a global network poses challenges at the country and international levels, but is an opportunity for COEs to share their experiences and consider future collaborations to minimize redundancies in effort. The ACC manages these global discussions by identifying communication options suited to each country’s technological capabilities. The ACC also organises semi-annual network meetings, reviews site establishment, protocol registration, human subjects protection (HSP) and good clinical practice (GCP) training documents; collects data to track program achievements; and maintains a web site to post documents, announcements and discussion forums. COEs are currently conducting research activities to classify, quantify, reduce and/or prevent risk factors associated with noncommunicable, chronic CVD. While the research activities are designed to address local needs, the findings should also influence global health policy. We will present the experiences of providing administrative, operational, or technical assistance to the research and training activities of these COEs, and describe the high impact projects-in-progress at the COEs and the ACC.

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**P1-498**

**MEASURES AND MODELS FOR CAUSAL INFERENCE IN CROSS-SECTIONAL STUDIES: ARGUMENTS FOR THE APPROPRIATENESS OF THE PREVALENCE OR AND RELATED LOGISTIC REGRESSION**

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1M Reichenheim,* 2E Coutinho. 1Department of Epidemiology, Institute of Social Medicine (IMS), Rio de Janeiro State University (UERJ), Rio de Janeiro, Brazil; 2Department of Epidemiology and Quantitative Methods, National School of Public Health Sergio Arouca (ENSP), Oswaldo Cruz Foundation (Fiocruz), Rio de Janeiro, Brazil

**Introduction**

Several papers have discussed which effect measures are appropriate to capture the contrast between exposure groups in cross-sectional studies, and which related multivariate models are suitable. Although some have favoured the Prevalence Ratio over the Prevalence OR—thus suggesting the use of log-binomial or robust Poisson instead of the logistic regression models—this debate is still far from settled and requires close scrutiny.

**Method**

In order to evaluate how accurately true causal parameters such as Incidence Density Ratio (IDR) or the Cumulative Incidence Ratio (CIR) are effectively estimated, we present a series of scenarios in which a researcher happens to find a pretest ratio of prevalences (eg, 2.0) in a given cross-sectional study.

**Results**

Provided essential and non-waivable structuring conditions for causal inference are all met, results show that the CIR is most often estimable whether through the prevalence ratio or the...
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 literature in the light of our findings.

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

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C R da S Castro,* 1 M I P Vianna, 2 M C T Ganguzza, 1 Instituto de Saúde Coletiva, Salvador, Bahia, Brazil; 2 Faculdade 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 (SRQ-20) and CAGE scale (adapted) 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-conditioned 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 (ORadj¼7.44; 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**

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C R da S Castro,* 1 M I P Vianna, 2 A de Carvalho Gonçalves. 1 Instituto de Saúde Coletiva, Salvador, Bahia, Brazil; 2 Faculdade de Odontologia da UFBA, Salvador, Bahia, 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 ages 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 (PR¼1.97, CI 1.59 to 2.45), as well as the occurrence of malocclusion (PR¼1.54, CI 1.16 to −2.05). The association between sucking habits and malocclusion was statistically significant (PR¼2.31, 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**

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F R Ferreira,* C C César, M F Linha-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 PRO-SAUTÉ STUDY**

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