direct link between prenatal stress and changes in working memory performance in humans.

P1-117 Investigation of family function of children with behavioral disorders

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Introduction: In a family, parents and children are considered as elements in a system, having mutual interactions on each other. But this fact should not be ignored that first parents and then family function affect children's sociability or mental disorder. In fact, a large group of children are exposed to behavioral problems and family environment is the first place for physical and mental growth of children. So, investigation of family function of children with behavioral disorders seems essential.
Materials and Methods: This is a descriptive cross-sectional one-group two-variable study. Its main research goal is "Investigation of Function of children with behavioral disorder in Isfahan within Seven months among 69 families referring to children psychiatry clinics". The data were collected by Mouse questionnaire and by some part through demographic characteristics. The data were analysed through SPSS Software and descriptive statistics including frequency distribution and mean.
Results: The findings showed that 34.8% of the subjects showed destructive behavioral disorders, 29% emotional disorders, 24.6% habit and eating disorders and 11.6% learning and growth disorders. Regarding lo item function family mean score, the lowest score was for active-recreational orientation by 40.9%.
Discussion: Since the most reported disorders are destructive behavioral disorders such as hyperactivity, aggression, lack of attention etc., and the lowest score is for function in different fields related to directing amusement activities, so amusement activities can be planned so that they can release the energy in these children.

P1-118 Childhood growth and adulthood cognition in a rapidly developing Southern Chinese population: the Guangzhou Cohort Biobank Project Study

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Aims: To determine whether later adulthood cognition (proxied by measure of 10-word delayed recall) varies directly with better childhood conditions as measured by final adulthood leg length, seated height and height (as proxy measures of childhood growth) in the Guangzhou Biobank Cohort Study.
Study design: Cross-sectional study.
Subjects: 13,377 Chinese women over age 50 years from the Guangzhou Biobank Cohort Study, China, enrolled in 2003–6.
Outcome measures: Main outcome measure delayed 10-word recall test as a measure of cognitive impairment (considered in three ways: continuous, dichotomous and in tertiles). Childhood and adulthood exposures obtained from interview, cardiovascular risk factors and anthropometric measures from physical examination.
Results: Adjusted for age and education, leg length, seated height and height were positively associated with delayed 10-word recall as a continuous outcome (leg length: beta coefficient (β) 0.008, 95% confidence interval (CI) [0.0002, 0.015]; seated height: β 0.021, 95% CI [0.012, 0.030], height: β 0.01, 95% CI [0.005, 0.016]). Further adjustment for relevant confounding factors (such as occupation, annual personal income, number of pregnancies and age of menarche) did not change these relations in any way.
Conclusions: The results of this study provide some support for the hypothesis of life course origins of adulthood cognitive impairment and in particular the importance of later childhood exposures in women. Certain patterns of childhood growth and childhood environments are cognitively protective. Such relations are likely to vary depending on geo-cultural and socio-economic circumstances of population.

P1-119 Effects of adverse prenatal conditions on rat cerebral development: a quantitative proton magnetic resonance spectroscopy (^{1}H-MRS) and histopathology analysis

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Aims: To compare the effects of adverse prenatal conditions on the developing brain by using quantitative proton magnetic resonance spectroscopy (^{1}H-MRS) and histopathology.
Study design: Caloric restriction (CR: 30%) was induced from gestational days 1 to 20, dexamethasone (DEX: 100 μg/kg/day) was infused from days 15–22, and nicotine (NIC: 3 mg/kg/day) from days 4–22. At postnatal day 7 (P7) and P21, ^{1}H-MRS was performed to measure the neurochemical profile; brain tissue was collected after acquisition for analysis.
Subjects: Eight to 10 rat pups per age group and condition were studied.
Outcome measures: Metabolite concentrations in the cortex and hippocampus were quantified using the LCModel. Brain tissue was assessed histologically for growth and glial development using quantitative measures.
Results: Metabolite concentrations were altered in all three groups, including but not restricted to: ascorbic acid, creatine, N-acetyl aspartate, phosphorylethanolamine, creatine and phosphocreatine, and taurine. Overall, at P21, the changes appeared more pronounced. Histologically, the length of radial glial fibres was longer in the DEX and CR groups in the frontoparietal motor cortex, and in the CR group in the parietal somatosensory area, suggesting delayed involution of radial glia and maturation into astrocytes. The density of astrocytes, neurons, and extent of myelination, was reduced in all experimental cohorts compared to controls.
Conclusions: The metabolite changes suggest a measurable impact of CR, DEX, and NIC exposure on postnatal neurochemical profile measured with ^{1}H-MRS; these changes may reflect alterations observed in the brain tissue. Combined, our results suggest that such prenatal insults impact cerebral development, and may potentially impair postnatal brain function.

P1-120 Influential factors of the development in infants and toddlers – application of the "International Classification of Functioning, Disability and Health" framework

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Aims: The Structural Equation Modeling (SEM) analysis was conducted based on "International Classification of Functioning, Disability and Health" (ICF) framework to examine the factors relating to general development of infants aged 6 months and 2 years.
Study design: Based on birth cohort study design, birth weight was used as general "health" at birth. The scores of Chinese Toddler

Temperament Scale at 4 months and sitting balance function at 6 months were the parameters of "body function". Scores of the Home Observation for Measurement of the Environment at 6 months represented "environmental factors".
Subjects: 122 infants born at National Taiwan University Hospital were collected during the period between May and October in 2004.
Outcome measures: Children's general development measured by the Comprehensive Developmental Inventory for Infants and Toddlers at 6 months and 2 years served as variables of "activities and participation" in ICF framework.

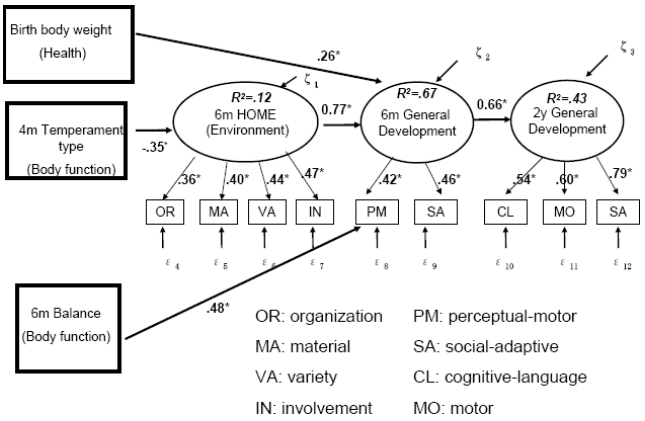

Figure 1. ICF based model for predicting outcomes in infants and toddlers.

Results: The model is illustrated in figure 1. The fit indices [$\chi 2(52, N = 122) = 51.2$, $p > 0.05$, NFI = 0.763, CFI = 1.000, IFI = 1.005, GFI = 0.933, RMSEA = 0.000 (95% CI: 0.000–0.056)] indicated acceptable model fit.
Conclusions: The hypothesized model analysed by SEM under ICF framework is one possible model that may be useful in early prevention and promotion for child development.
Part of the data has been presented in The 54th Academic Conference of The Physical Therapy Association of ROC (Taiwan) on April 22, 2007.

P1-121 Is birth weight associated with risk of depression in young women? Evidence from the Southampton Women's Survey

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Aims: Some studies have shown associations between lower birth weight and an increased risk of depression, but others have not. We aimed to assess the relationship between depression and birth weight in a group at high risk of depression, namely young women.
Study design: The study was set within the Southampton Women's Survey, a general population sample of young women. Current depression was assessed using the GHQ12 questionnaire. Women were also asked if they had ever received treatment for depression in the past. Reported birth weights were obtained, and, for those born in Southampton, birth weights were abstracted from hospital records.
Subjects: 5,830 women aged 20–34 years.
Outcome measures: Prevalence ratios for current and past depression in relation to reported and recorded birth weights.
Results: Prevalence ratios for current depression and for past depression, in relation to reported or recorded birth weights were all remarkably close to 1.0, with narrow 95% confidence intervals. For example, the prevalence ratio from the fully adjusted model for current depression in relation to a standard deviation increase in reported birth weight was 1.01 (95% CI: 0.98–1.05). In exploratory analyses, we found a weak association between shorter duration of gestation at birth and depression in later adulthood.
Conclusions: As birth weight and duration of gestation are relatively poor markers of fetal development, other markers of fetal and early development should be explored. However, our data do not support a major developmental contribution to the aetiology of depression in women.

P1-122 Maternal undernutrition aggravates fetal brain damage caused by infection

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Aims: We have designed an experimental model of mental disease by causing infection in pregnant mice with undernutrition and investigated the effect on fetal brain.
Study design and Subjects: We fed low protein diet (L) or normal diet (N) to female C57BL/6N mice and performed transvaginal administration of LPS (0.1 mg/ml 30l) or PBS (30l) from the 14th day of pregnancy. In total, we investigated the following four groups (L_LPS, L_PBS, N_LPS, N_PBS). We collected brain samples from E17 fetuses and P7 neonates, and made cross-sections for immunohistochemistry.
Outcome measures: We performed immunostaining with olig2, PDGFR alpha, MBP, GFAP and nestin antibodies and examined differentiation to Glia. We also investigated active caspase3 and performed TUNEL assay for measurement of apoptosis. Upon performing the above studies, we photographed periventricular white matter area in the brain, measured the number of positive cells and made statistical analyses.
Results: We detected no difference in E17 fetus brain upon administration of LPS with/without undernutrition. However, in P7 neonatal mice GFAP(+) and nestin(+) cells/GFAP(+) cells increased upon administration of LPS both with normal diet or undernutrition diet. Decrease of MBP(+) cells was observed in L_LPS mice only.
Conclusions: Transvaginal administration of LPS caused increase of GFAP(+) and nestin(+) cells//GFAP(+) cells. These results indicate that maternal infection may affect fetal brain in an adverse way. Brain damage observed in only L_LPS mice suggests maternal under nutrition may induce hyperactive response for infection in fetal brain.

P1-123 The effect of prenatal methyl donor deficiency on gene expression in the hippocampus and on behaviour of rat offspring

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Emerging evidence suggests that environmental influences *in utero* may predispose offspring to development of several neuropsychiatric conditions through alterations in epigenetic mechanisms.
Aims of the study: To investigate whether prenatal methyl donor deficiency influences the behaviour of rat offspring, and if so, whether it is linked to epigenetic gene regulation.
Study design: Pregnant rats were maintained on either a control diet or a methyl donor deficient (folate, methionine, and choline) diet prior to and throughout pregnancy. Methyl-deficient newborn offspring were cross-fostered onto control mothers, and all rats were fed regular chow after weaning. Effects of the prenatal diet on gene expression in the hippocampus and adult behaviour were studied.