

efficacy intervention trial using novel supplementations Sprinkles (Suppleforte) was performed.

Methods Controlled cluster randomised trial. We compared the efficacy of Sprinkles (the Sprinkles arm received one-dose multiple micronutrients sachets) with the standard treatment (the Control arm received standard liquid iron and vitamins A+D) supplied free of charge to the families with children from 6 to 12M of age attending well-baby clinics. Infants were enrolled between July 2005 and September 2007 in 12 neighbourhood clinics (randomisation units, clusters).

Results The final study population comprised 621 eligible infants. There was a positive significant effect of intervention among children of Sprinkles groups on mean level of folic acid and zinc in both Bedouin and Jewish populations ($p < 0.05$). Sprinkles use was associated with a reduced risk of iron deficiency (at least 2 of 6 iron deficiency anaemia indicators) at age 12M, compared with control intervention (OR=0.33, $p=0.001$) after controlling for the 6M iron status, iron consumption from food, breastfeeding duration and reported supplementations use. More Control Bedouin children were hospitalised for any/all infectious disease cause (27.2%), compared to the Sprinkles (14.6%, $p=0.005$). Significantly more adverse events (changes in stool colour, diarrhoea, and constipation) were reported in Controls than in Sprinkles in both ethnic populations.

Conclusions Sprinkles supplementation was associated with a marked reduction in risk of iron deficiency at age 12M and less adverse events and should be recommended formulations.

P2-374 BEHAVIOUR PROBLEMS AND OVERWEIGHT ADOLESCENTS: THE ROLE OF GENDER AND RESILIENCE

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It is well-recognised that obesity is a complex, multifactorial condition which includes both genetic and environmental factors. Although it is controversial, there is evidence that behavioural problems and being overweight are associated. Furthermore, relatively few studies have analysed the role of resilience in this relationship.

Objective To analyse the association between behaviour problems (BP) and the overweight condition (OW) among adolescents and to examine the role of resilience and gender.

Methods A cross-sectional study of 951 adolescents aged 11–18 years old who live in Monte Gordo district, a mixed rural-urban region in the northeast of Brazil. The overweight condition was defined as BMI/age z-score greater than +1SD (WHO, 2007). Behaviour problems were estimated by Youth Self Report (YSR/11–18). Resilience was measured by the Wagnild & Young scale. The 90th percentile was used as the cut-off for behavioural problems and resilience scores below the 25th percentile was considered low resilience. OR was obtained using multiple logistic regression.

Results We observed an overweight prevalence of 14.7% and identified behaviour problems in 9.9% of subjects. The association between BP and the overweight condition remained after adjusting for gender, resilience, age, ethnicity and socio-economic level (OR: 2.06; 95% CI 1.23 to 3.46). Low resilience was not significant but following a stratified analysis for gender we observed an association between BP and OW only in females (OR: 2.54; 95% CI 1.41 to 4.58).

Conclusion The results demonstrate an association between behaviour disturbance and the overweight condition in female adolescents with no protective effect of resilience. We recommend greater incentives to reduce the stressors to which adolescents are exposed.

P2-375 FAMILY HISTORY OF DIABETES: THE ROLE OF GRANDPARENTS DATA TO IDENTIFY ADOLESCENTS AT DIABETES RISK

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Objective To evaluate the role of grandparents' history of diabetes on defining family history of diabetes in order to identify adolescents at high risk of diabetes.

Study design and Setting We evaluated 1276 population-based adolescents, aged 13-year-old, from Portugal. Data were collected by self-reported questionnaires and a clinical evaluation was performed, including a fasting blood sample.

Results The prevalence of impaired fasting glucose (IFG)/diabetes was 4.1% using American Diabetes Association (ADA) criteria and 0.94% using the WHO criteria. Using data only from Parental History, 103 adolescents (8%) were identified as having a positive family history of diabetes, while combining both parental and grandparental history (Total Family History), 468 adolescents were additionally identified as having a positive history, performing a total of 571 adolescents (45%). After adjusting for sex and parents education, the OR for having fasting plasma glucose ≥ 75 th percentile considering only Parental History was 0.91 (95% CI 0.57 to 1.47) and combining data from parents and grandparents the OR was 1.17 (95% CI 0.83 to 1.65). Parental History's sensitivity to identify IFG/diabetes by the ADA criteria was 2.6%, while total family history's sensitivity (including grandparents' data) was 62%.

Conclusion Although there's no significant association between IFG and a positive family history, combining parental with grandparental history (total family history) lead to a 5.5-fold increase in the identification of adolescents with a positive family history. So, on adolescent screening, it seems better to use parental plus grandparental information instead of just relying on parental data.

P2-376 DEVELOPING SUSTAINABLE EPIDEMIOLOGY CAPACITY AMONG PUBLIC HEALTH FIELD WORKERS IN ZAMBIA, RESULTS OF A PILOT TRAINING

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Introduction District and provincial-level public health field workers in Zambia collect, compile, and send data from various sources to national counterparts. However, these workers have had limited data training. They need skills to generate relevant, quality data, analyse them, and use them for local decision-making. A steering committee, comprised of the Zambian Ministry of Health, University of Zambia, National AIDS Council, Central Statistics Office, United States Centers for Disease Control and Prevention, and others, developed a training program for these workers to obtain these skills and build sustainable epidemiology capacity in Zambia.

Methods We developed curricula to teach standardised data collection, summarisation, interpretation and use. The training was piloted among 12 district and provincial-level staff in December 2010. The pre-post test and course evaluations were linked directly

to course objectives and administered during the pilot. Competency on the post-test was set at $\geq 70\%$. Tests and evaluations were analysed to guide curriculum improvements.

Results Ten participants took the pre-post test; mean scores were 60.3% (46%–81%) and 76.7% (70%–83%) respectively, with a mean increase of 16.4% (1%–37.5%). On course evaluations, all participants indicated that training content was relevant to their work. Areas of improvement included the need for better guidance on improving data quality and interpreting statistical test results.

Conclusion All participants demonstrated overall competency on knowledge and skills covered in training. Training will be revised and implemented among public health field workers throughout the country. We will continue to actively involve government and local partners to improve potential for sustainability.

P2-377 A RURAL-URBAN COMPARISON OF THE PREVALENCE AND PATTERNS OF ELDER ABUSE IN OYO STATE, SOUTH WESTERN NIGERIA

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Introduction Globally, it has been documented that the population is ageing at an unprecedented rate. The issue of elder abuse has not been adequately addressed, especially in Nigeria because it has not yet been recognised as a serious matter. This study compares prevalence, patterns and factors associated with elder abuse among the elderly in a rural and an urban community in Oyo State, Nigeria.

Methods A comparative cross sectional survey was conducted among the elderly in selected rural and urban Local Government Areas in Oyo state, Nigeria, using interviewer administered questionnaires. Data obtained was analysed using SPSS version 16.

Results A total of 722 respondents were interviewed, 358 (49.6%) in the urban location and 364 (50.4%) in the rural area. The mean age of respondents was 70.92 ± 9.21 years (urban 70.22 ± 8.91 years; rural 71.62 ± 9.47 years $p < 0.05$). Over half of the respondents were female (56.0%) and married (58.2%). The urban and rural prevalence of abuse are: physical abuse 21.8% vs 6.3%; emotional abuse 16.8% vs 4.1%; social abuse 27.4% vs 10.2% and financial abuse 20.9% vs 7.7% respectively. Sexual abuse (0.6%) was reported only in the urban area. The positive predictors of elder abuse were locality, living arrangements and functional impairment.

Conclusion This study reveals that there is a high prevalence of all forms of elder abuse especially in the urban areas. There is a need to create awareness of the problem of elder abuse and formulate social security policies to protect the elderly.

P2-378 WITHDRAWN

P2-379 EFFECTIVENESS OF A LOW-IMPACT EXERCISE PROGRAM IN LEBANESE MARGINALISED POSTMENOPAUSAL WOMEN WITH PSYCHOLOGICAL DISTRESS: A RANDOMISED CONTROLLED TRIAL

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Background Psychological distress (PD) is common worldwide. Physical exercise is usually recommended by physicians to relieve PD among older adults. However, there is not yet strong enough evidence to support this recommendation.

Aim This study examined the effect of a low impact exercise program on marginalised Lebanese women with psychological distress.

Methods Community-dwelling women with a mean age of 56 years were randomised to either a low impact exercise program of three times a week for 6 weeks or a control group that received daily calcium tablets. The 12-item General Health Questionnaire (GHQ-12) was used to assess PD, the main outcome measure, and intention-to-treat analysis was performed. A focus group discussion was then conducted with a group of women who completed the exercise program.

Results Sixty nine women were enrolled. Psychological distress was significantly lower at the completion of the study when compared to baseline levels in both intervention and calcium groups, whereby a drop in the GHQ-12 was noted in all 69 women, but this drop did not differ significantly between the two groups.

Conclusion This study showed that light impact exercise did not result in significant improvement of PD though the women who participated in the exercise program reported improvement and asked to sustain this activity.

P2-380 NEONATAL MORTALITY RISK FACTORS IN A RURAL PART OF IRAN: A NESTED CASE-CONTROL STUDY

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Introduction Neonatal death has a complex causal framework and improvement of this health indicator is quite gradual. The aim of present study was evaluation of neonatal death risk factors in a substantial sample of Iranian neonates in a part of rural areas by using a relatively new design and modern analytic technique.

Methods and Materials This study was conducted as a nested case-control study and the study cohort was all of the neonates who were born in rural area of Kohgiluyeh and Boyerahmad province (South of Iran) during one calendar year (from March 2006 to March 2007). Due to occurrence of 97 cases of neonatal death in the studied cohort (6900 newborn), 97 controls were selected, resulting in a total sample size of 194.

Results Univariate conditional logistic regression for each variable was performed and any risk factors that showed marked association (p value < 0.2) was selected for the next step analysis. In the final model (conditional logistic regression) LBW (AOR=8.92), C-section (AOR=9.17), birth rank more than 3 (AOR=6.12), mother illiteracy (AOR=3.96) and birth spacing < 24 months (AOR=5.45) showed significant statistical association (p value < 0.05) with neonatal mortality.

Conclusion This study has identified; LBW, C-section, birth spacing < 24 months, mother illiteracy and birth rank more than 3 as potential risk factors for neonatal mortality.

P2-381 CHILDHOOD MORTALITY RISK FACTORS IN RURAL AREAS OF SHAHROUD, IRAN: A COMMUNITY BASED NESTED CASE-CONTROL STUDY

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Background There is a complex causal framework for one-month to five-year-old child mortality. Hence, the improvement of this health indicator would also be quite gradual. This study was carried out to evaluate potential risk factors for death among children aged 1–59 months.