

54 996 eligible individuals, 52 029 (95%) responded. In 2006, we delivered another questionnaire to all community-dwelling individuals aged over 40 years in Ohsaki City. Of 77 325 eligible individuals, 49 603 (64.2%) responded. The 9206 participants who answered both questionnaires were classified by self-reported sleep duration:  $\leq 5$  h (short sleep), 6 h, 7 h (reference), 8 h, and  $\geq 9$  h (long sleep). The main outcome measure was a weight gain of  $\geq 10$  kg or a body mass index (BMI) of  $\geq 25$  kg/m<sup>2</sup> (obesity) calculated from self-reported height and weight. We used logistic regression analyses to derive ORs and 95% CIs adjusted for sex, age, BMI, education, smoking, alcohol drinking, occupation, marital status, menopausal status, and caffeine beverage consumption.

**Results** We observed no association between sleep duration and risk of weight gain and obesity. Multivariate ORs for weight gain were 1.14 (95% CI 0.70 to 1.87) for short sleep and 1.16 (95% CI 0.90 to 1.51) for long sleep. Multivariate ORs for obesity were 0.98 (95% CI 0.62 to 1.55) for short sleep and 1.05 (95% CI 0.83 to 1.33) for long sleep.

**Conclusion** Sleep duration does not affect the risk of weight gain or obesity.

**P2-456** **EVALUATING BURDEN OF ROTAVIRUS-ASSOCIATED MORTALITY IN THE EASTERN MEDITERRANEAN REGION; A CRUCIAL STEP FOR INFORMED DECISION-MAKING ON IMPLEMENTATION OF ROTAVIRUS VACCINE**

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**Introduction** Rotavirus-attributed diarrhoea is a major cause of death in young children. The WHO-Eastern Mediterranean Region, with a population over 590 millions, is a diverse area in terms of socio-economic status and health indicators. This study aimed to evaluate the burden of rotavirus-associated mortality in order to encourage implementation of rotavirus vaccine.

**Methods** Based on rotavirus-associated mortality in the pre-vaccination period, the effect of rotavirus vaccine to avert children deaths was calculated.

**Results** In the Eastern Mediterranean Region more than 61 000 children aged  $<5$  years died of rotavirus in 2004. Pakistan and Afghanistan, each with more than 15 000 deaths per year, were the countries with the highest rates of rotavirus-associated mortality; follow by Iraq, Somalia, Sudan, Yemen, Egypt and Morocco. Bahrain, Kuwait and Qatar with less than 10 deaths per year were the countries with the lowest rates of rotavirus-associated mortality. When the coverage of currently used vaccines was applied to a rotavirus vaccine, a minimum of 24 100 and maximum of 43 300 deaths would be averted with vaccine efficacy of 50% to 90%, respectively.

**Conclusion** Rotavirus-associated mortality and morbidity varies considerably in the region. While in some countries reducing rotavirus-associated mortality is a great concern, in others reducing rotavirus-attributed morbidity is the main benefit of rotavirus immunisation. Implementing comprehensive strategies to facilitate usage of rotavirus vaccine in the region is encouraged.

**P2-457** **TRADE IS ASSOCIATED WITH THE DISTRIBUTION OF UNDER, OVER, AND NORMAL WEIGHT AMONG ADULT RESIDENTS OF LOW-AND-MIDDLE-INCOME COUNTRIES: A MULTILEVEL ANALYSIS USING DATA FROM THE WORLD HEALTH SURVEYS**

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**Introduction** Few empirical studies have investigated the relation between trade and individual weight status.

**Methods** We used data from a sample of 81 449 adults from 24 low-and-middle-income countries who took part in the World Health Survey, a population-based survey of adults in 2002–2003, to examine the multilevel association between trade [ie, levels of trade, imports, and foreign direct investment (FDI)] and individual-level weight status.

**Results** The prevalence of underweight ranged from 2.51% (SE=0.85) in Bosnia-Herzegovina to 34.03% (SE=1.05) in India and the prevalence of overweight ranged from 7.74% (SE=0.69) in India to 49.08% (SE=1.98) in Russia. Marital, economic, and health status were among the most important individual-level predictors of weight. At the macro-level, FDI as a percent of GDP was associated with lower odds of underweight relative to normal weight for rural and urban residents, independently of individual-level covariates and country-level GDP and urbanisation. However, among rural men and women, FDI was positively associated with overweight compared to normal weight; a one unit increase in net inflow of FDI as a percent of GDP was associated with a 15% higher odds of overweight relative to normal weight among rural men (OR=1.15, 95% CI 1.05 to 1.26) and women (OR=1.15, 95% CI 1.07 to 1.23).

**Conclusion** Trade may be associated with individual weight status.

**P2-458** **A DESCRIPTIVE STUDY ON THE TUBERCULOSIS IN MONGOLIA**

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**Introduction** Tuberculosis (TB) is highly prevalent in Mongolia, where approximately 4000 TB cases reported each year. The goal of this study is to determine the incidence of tuberculosis particularly MDR-TB cases registered in Mongolia.

**Methods** A descriptive method was used to study the incidence of MDR-TB reported in Mongolia. The information including age, gender, date of diagnosis, type of drug resistance, treatment outcomes were taken from national report.

**Results** Since the first diagnosis of MDR-TB in Mongolia, a total of 419 MDR-TB cases or 1.6 per cases per 10 000 population were registered to date, which indicates the increasing tendency in the recent years. Average age ( $\pm$ SD) of 419 MDR-TB cases was  $32.3 \pm 10.9$ , and 245 (58.5%) were males. The highest MDR-TB morbidity reported in Selenge, Darhan-Uul, Dornod provinces. More than 60% of all MDR-TB cases were reported in Ulaanbaatar city. One hundred seventy nine (42.7%) patients out of all confirmed MDR-TB cases are enrolled in treatment, 133 (31.7%) are died prior to start treatment, 5 (1.2%) are treated in non NTP units, 3 (0.7%) are refused to receive MDR-TB treatment, 99 (23.6%) patients are in waiting list. The deaths are highly reported (61.8%) since 2003 while the management of MDR-TB cases was in beginning stage and Second-line drugs was not procured.

**Conclusion** Incidences of tuberculosis as well as MDR-TB have been increasing during the last years in Mongolia so that early diagnosis and proper management is urgently required in this regard.

**P2-459** **RESILIENCE AND RISK-TAKING BEHAVIOUR AMONG THAI ADOLESCENTS**

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