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CONTENTS

Adolescent Health

1. Personality, Stress and Coping in Indian Adolescents: A Correlation Model. Khushali Adhiya-Shah, Suman Trivedi. *Research Journal of Humanities and Social Sciences, Vol 8, No. 4, Oct-Dec, 2017*

http://rjhssonline.com/AbstractView.aspx?PID=2017-8-4-2

Adolescents confront several stressors in their environment, and the distressing events trigger physical and mental illnesses. Differences in their coping responses are partly controlled by personality; partly influenced by social observation. This study examines a correlational model between personality, stress and coping strategies in 154 school-going, upper-economic strata children in a private school of Ahmedabad. Bi-variate correlations and t-test analysis reveal significant correlations between personality traits and stress. Findings report that extrovert and conscientious personalities experience least stress; however the former prefers problem-focused coping while the latter prefers emotion-focused coping. Personalities high on neuroticism experience high stress, with no gender difference and report no significant preference for a specific coping strategy. While no gender difference is reported in the experience of stress, there is a gender difference between their choice of coping styles. Males have reported a mixed preference of problem and emotion focused coping while females indicate preference for emotion-focused coping largely. Implications for adolescent mental health practitioners and scope for further research is discussed.

Keywords: Stress, Adolescence, Personality, Coping, Stress and Coping, Indian Adolescents.

Biomedical Science

2. Biotransformation of anabolic compound methasterone with Macrophomina phaseolina, Cunninghamella blakesleeana, and Fusarium lini, and TNF-α inhibitory effect of transformed products. Malik Shoaib Ahmad,Sammer Yousuf, Atia-tul-Wahabb, Almas Jabeenb, Atta-ur-Rahmana, M. Iqbal Choudhary. *Steroids, Vol 128, Dec 2017, Pp-75*

https://www.sciencedirect.com/science/article/pii/S0039128X17300545

Microbial transformation of methasterone (1) was investigated with Macrophomina phaseolina, Cunninghamella blakesleeana, and Fusarium lini. Biotransformation of 1 with M. phaseolina yielded metabolite 2, while metabolites 3–7 were obtained from the incubation of 1 with C. blakesleeana. Metabolites 8–13 were obtained through biotransformation with F. lini. All metabolites, except 13, were found to be new. Methasterone (1) and its metabolites 2–6, 9, 10, and 13 were then evaluated for their immunomodulatory effects against TNF-α, NO, and ROS production. Among all tested compounds, metabolite 6 showed a potent inhibition of proinflammatory cytokine TNF-α (IC50 = 8.1 ± 0.9 μg/mL), as compared to pentoxifylline used as a standard (IC50 = 94.8 ± 2.1 μg/mL). All metabolites were also evaluated for the inhibition of NO production at concentration of 25 μg/mL. Metabolites 6 (86.7 ± 2.3%) and 13 (62.5 ± 1.5%) were found to be the most potent inhibitors of NO as compared to the standard NG-monomethyl-l-arginine acetate (65.6 ± 1.1%). All metabolites were found to be non-toxic against PC3, HeLa, and 3T3 cell lines. Observed inhibitory potential of metabolites 6 and 13 against pro-inflammatory cytokine TNF-α, as well as NO production makes them interesting leads for further studies.

Keywords: Methasterone, Anabolic-androgenic, Biotransformation, Macrophomina phaseolina, Cunninghamella blakesleeana, Fusarium lini

3. Benefit-risk of corticosteroids in acute gout patients: An updated meta-analysis and economic evaluation. Xinliang Liu, Dehong Sun, Xiaosong Ma, Chuansheng Li, Jie Ying, Youde Yan. *Steroids, Vol 128, Dec 2017, Pages 89-94*

https://www.sciencedirect.com/science/article/pii/S0039128X17301617

The efficacy, safety and health-economic outcomes were compared between corticosteroid and non-corticosteroid treatments in acute gout patients. All electronic literatures comparing the curative effects or full economic evaluations of corticosteroids versus non-corticosteroids on acute pain in acute gout patients and published until June 30, 2017 in any language were searched through PubMed, EMBASE, Web of Science, and Cochrane Central Register of Controlled Trials. Pooled odds ratios with 95% confidence intervals and standard(or weighted) mean difference were calculated using random-or fixed-effects models according to the I2 statistic test of heterogeneity. Economic elevations were combined through qualitative narrative synthesis. Finally, seven randomized controlled trials(RCTs) involving 929 patients were included here and suggested corticosteroids had comparable analgesic efficacy to non-corticosteroids on day 5. As for inflammation and PGA, corticosteroids might outperform non-corticosteroids in reducing tenderness and swelling. Corticosteroids versus non-corticosteroids could significantly reduce incidence of only serious adverse advents, but not total adverse advents, with substantial heterogeneity. Qualitative narrative synthesis of economic elevation involving only one study shows corticosteroids are more cost-effective than indomethacin. The existing RCTs do not provide sufficient or precise evidence that corticosteroids are superior to non-corticosteroids in pain relief of acute gout patients. Therefore, studies on chronic use of corticosteroids or comparative studies with colchicine, tramadol and/or opiates may be needed in the future, as is patient satisfaction with analgesic control.

Keywords: Corticosteroids, Prednisolone, Acute gout, Gouty arthritis, Analgesia, Inflammation

4. Full spectroscopic characterization of two crystal pseudopolymorphic forms of the antiandrogen cortexolone 17α-propionate for topic application. Patrizia Ferraboschia, Maria Chiara Sala, Riccardo Stradi, Laura Ragonesi, Clarissa Gagliardi, Paolo Lanzarotti, Enzio M.Ragg, Matteo Morie, Fiorella Meneghetti. *Steroids, Vol 128, Dec 2017, Pages 95-104*

https://www.sciencedirect.com/science/article/pii/S0039128X17301629

Cortexolone-17α-propionate (CP) is a topically active antiandrogen useful in the treatment of skin disorders. In the solid state, three anhydrous forms of this drug (CPI, CPII and CPIII) occur, together with one hydrated crystal (CPW). The single crystal structure of the monohydrated phase, CPW, compared with that of the anhydrous form CPIII, shows a markedly different solid state behavior. These latter pseudopolymorphic forms have also been fully characterized by spectroscopic methods.

Keywords: Solvopolymorphism, Steroidal hormone, X-ray diffractometry, Solid-state NMR spectroscopy

Child Health

5. Anthropometric and cardiometabolic risk factors in parents and child obesity in Segamat, Malaysia. Uttara Partap Elizabeth H Young Pascale Allotey Manjinder S Sandhu Daniel D Reidpath. *International Journal of Epidemiology, Vol 46, No. 5, Oct 2017, Pages 1523–1532*

https://academic.oup.com/ije/article/46/5/1523/3902976

Background

There is little evidence regarding risk factors for child obesity in Asian populations, including the role of parental anthropometric and cardiometabolic risk factors. We examined the relation between parental risk factors and child obesity in a Malaysian population.

Methods

We used data from health and demographic surveillance conducted by the South East Asia Community Observatory in Segamat, Malaysia. Analyses included 9207 individuals (4806 children, 2570 mothers and 1831 fathers). Child obesity was defined based on the World Health Organization 2007 reference. We assessed the relation between parental anthropometric (overweight, obesity and central obesity) and cardiometabolic (systolic hypertension, diastolic hypertension and hyperglycaemia) risk factors and child obesity, using mixed effects Poisson regression models with robust standard errors.

Results

We found a high burden of overweight and obesity among children in this population (30% overweight or obese). Children of one or more obese parents had a 2-fold greater risk of being obese compared with children of non-obese parents. Sequential adjustment for parental and child characteristics did not materially affect estimates (fully adjusted relative risk for obesity in both parents: 2.39, 95% confidence interval: 1.82, 3.10, $P < 0.001$; P for trend < 0.001). These associations were not modified by parental or child sex. We found no consistent evidence for associations between parental cardiometabolic risk factors and child obesity.

Conclusions

Parental obesity was strongly associated with child obesity in this population. Further exploration of the behavioural and environmental drivers of these associations may help inform strategies addressing child obesity in Asia.

Keywords: South East Asia, Child Obesity, Anthropometric Risk Factors, Cardiometabolic Risk Factors, Intergenerational Associations, Health and Demographic Surveillance

6. Impact of Traditional Myth on Infant Health in Rural Area (Special reference of Various Villages of Durg, Raipur and Rajnadgaon District of Chhattisgarh). Shailendra Kumar. *Research Journal of Humanities and Social Sciences, Vol 8, No. 4, Oct-Dec, 2017*

http://rjhssonline.com/AbstractView.aspx?PID=2017-8-4-6

The difference between human and other much important difference is seen from the children in which there are two very prominent differences are first only the human is a creature into the living world who needs a long-duration care in childhood and second is that it can be seen the effect of site and society in; he lives. These are many direct and indirect effects over the child of this culture, in which there is much traditional and local knowledge is used to take care of the children from disease. Sometime it affects to the children positively or negatively. It presented the research letter is based over care of new-born children of Durg, Rajnandgaan and Raipur district of Chhattisgarh state in which intellectually the negative effect is seen in the new-born children by tradition and costumes and many kinds of activities related with it. Presented survey study is based on triangular method in which the data is compiled by the both counting and quality method.

Keywords: Myth, Child Health, Magic, Religion

Cyber Crime

7. A Study on Awareness of Cyber Crime and Security. Anupreet Kaur Mokha. **Research Journal of Humanities and Social Sciences, Vol 8, No. 4, Oct-Dec, 2017**

http://rjhssonline.com/Archives.aspx?Journal=Research+Journal+of+Humanities+and+Social+Sciences

Usage of internet has become a daily routine for majority of people for day-to-day transactions. The number of internet users has grown tremendously and so does cyber-crimes. Cyber-crime is the crime that is done using computer and network. The threat of cyber-crime is an ever present and increasing reality in both the private and professional sectors. With the advent of internet, old crimes have taken on a new appearance. The purpose of this research is to make awareness regarding cyber-crimes which are happening in today's world and also to create awareness of increased cyber security. This paper attempts to analyze the awareness of cyber-crime among internet users with different age groups and educational qualifications. Linear Regression Model has been applied for analyzing both the objectives. This paper finds that there is a relationship exists between the age groups and educational qualification of the respondents. So, it is the duty of one and all internet users to be aware of the cyber-crime and security and also help others by creating awareness among them.

Keywords: Cyber Crime, Security

Diseases

8. Challenges impeding integration of oral health into primary health care. Zahra Ghorbani , Mina Pakkhesal , Shahnam Arshi , Mohammad J. Eghbal , Marzieh Deghatipour , Marc Tennant and H. Malekafzali Ardakani. *Eastern Mediterranean Health Journal, Vol 23, No. 12, Dec, 2017.Pp-802*

http://www.emro.who.int/emhj-volume-23-2017/volume-23-issue-12/challenges-impeding-integration-of-oral-health-into-primary-health-care.html

The primary healthcare (PHC) services in the Islamic Republic of Iran have succeeded in addressing high levels of communicable diseases; however, they seem less able to deal with maternal and paediatric oral diseases. The aim of this study was to examine problems in integrating oral health services into PHC. This was a qualitative research study comprising focus group discussions and interviews. Five focus-group discussions were held with midwives, family healthcare practitioners, rural PHC workers, duty-service dentists, and public health dentists. Also, individual interviews were organized with experts of faculty members in related fields, informant managers and policy makers, and in-depth interviews were done with pregnant women in four PHC centres. Audiotapes were transcribed following each session, and then a qualitative thematic analysis was carried out on gathered data. Data analysis resulted in 4 main themes relating to the challenges: environmental, educational, organizational and school-based programme factors. This study provides a clearer understanding of the challenges of integrating oral health services into PHC.

Keywords: Primary Health care, Communicable Diseases, Oral Health

9. Corticosteroid therapy exacerbates the reduction of melatonin in multiple sclerosis. ShimaDokoohakia, Majid Ghareghania, Amir Ghanbaria, Naser Farhadia, Kazem Zibarab, Heibatollah Sadeghia. *Steroids, Vol 128, Dec 2017, Pp-32*

https://www.sciencedirect.com/science/article/pii/S0039128X17301861

Objectives

Corticosteroid therapy is employed in multiple sclerosis (MS), a neurological abnormality characterized by an inflammatory process. Melatonin, a potent sleep-promoting and circadian phase regulatory hormone, is produced mainly in the pineal gland whose inhibition leads to sleep disturbances.

Methods

In this study, methylprednisolone (MP) corticosteroid treatment was used in an acute experimental autoimmune encephalomyelitis (EAE) rat model (intraperitoneal, 30 mg/kg) and in MS patients (intravenous, 1000 mg/day), followed by assessing melatonin serum levels.

Key findings

Results showed that mean clinical scores were significantly improved in MP- versus PBS-treated EAE rats (1.5 vs 4.1, respectively). In addition, MP was found to induce a significant decrease in serum IFN-γ, whereas IL-4 levels were significantly increased, in comparison to PBS-treated EAE rats. The ratio of IFN-γ/IL-4, which acts as an indicator of Th-1/Th-2, was significantly lower in MP treated, compared to PBS treated EAE rats or controls. Moreover, serum levels of melatonin showed a significant decrease in the MP group, compared to normal rats. Moreover, MP therapy for 1 or 2 days resulted in a significant reduction of melatonin serum levels in MS patients.

Conclusions

Since corticosteroids cause a reduction in melatonin serum levels, an important hormone in sleep regulation, their prescription to MS patients should be carefully considered. Corticosteroids could be a cause of insomnia and sleep disturbance in patients receiving this type of medication.

Keywords: Multiple sclerosis, Experimental, autoimmuneencephalomyelitis, Corticosteroid, Methylprednisolone , Melatonin

10. Gamma-glutamyltransferase levels, prediabetes and type 2 diabetes: a Mendelian randomization study. Jana Nano, Taulant Muka, Symen Ligthart, Albert Hofman, Sarwa Darwish, Murad Harry, LA Janssen, Oscar H Franco, Abbas Dehghan. *International Journal of Epidemiology, Vol 46, No. 5, 1 October 2017, Pages 1400–1409*

https://academic.oup.com/ije/article-abstract/46/5/1400/3067663?redirectedFrom=fulltext

Background

High levels of serum gamma-glutamyltransferase (GGT) are associated with increased risk of prediabetes and type 2 diabetes in observational studies. It is unclear whether this relationship is causal, arises from residual confounding or is a consequence of reverse causation.

Methods

We used data from a prospective population-based cohort study, compromising 8611 individuals without diabetes at baseline. Cox proportional hazard models were used to study the association between serum GGT levels and incident prediabetes and diabetes. A Mendelian randomization (MR) study was performed using a genetic risk score consisting of 26 GGT-related variants, based on a genome-wide association study (GWAS) on liver enzymes. Association with diabetes and glycaemic traits were investigated within the Rotterdam Study and large-scale GWAS.

Results

During follow-up, 1125 cases of prediabetes (mean follow-up 5.7 years) and 811 cases of type 2 diabetes (6.9 years) were ascertained. The predicted hazard ratios per standard deviation (SD) change in GGT levels in the multivariable model were 1.10 for prediabetes [95% confidence interval (CI): 1.02–1.19] and 1.19 for type 2 diabetes (95% CI: 1.10–1.30). The genetic risk score associated with increased GGT levels (beta

per SD log GGT = 0.41, 95% CI: 0.35–0.47), explaining 3.5% of the observed variation in GGT. MR analysis did not provide evidence for a causal role of GGT, with a causal relative risk for prediabetes and type 2 diabetes per SD of log GGT of 0.97 (95% CI: 0.91–1.04) and 0.96 (95% CI: 0.89–1.04), respectively. Multiple instrumental analysis using genetic associations with type 2 diabetes and glycaemic traits from previous GWA studies detected no causal effect of GGT.

Conclusions

MR analyses did not support a causal role of GGT on the risk of prediabetes or diabetes. The association of GGT with diabetes in observational studies is likely to be driven by reverse causation or confounding bias. As such, therapeutics targeted at lowering GGT levels are unlikely to be effective in preventing diabetes.

Keywords: Type 2 Diabetes, prediabetes, gamma-glutaryltransferase, Mendelian Randomization

11. Adherence to a healthy lifestyle and the risk of type 2 diabetes in Chinese adults. Jun Lv Canqing Yu Yu Guo Zheng Bian Ling Yang Yiping Chen Ximin Hu Wei Hou Junshi Chen Zhengming Chen. *International Journal of Epidemiology, Vol 46, No. 5, October 2017, Pages 1410–1420*

https://academic.oup.com/ije/article/46/5/1410/3860951

Background

Simultaneously adhering to multiple healthy lifestyle factors has been related to up to 90% reduction in type 2 diabetes (T2DM) incidence in White populations; however, little is known about whether such protective effects persist in other non-White populations.

Methods

We examined the associations of six lifestyle factors with T2DM in the China Kadoorie Biobank of 461 211 participants aged 30–79 years without diabetes, cardiovascular diseases or cancer at baseline. We defined low-risk lifestyle factors as

non-smoking or having stopped for reasons other than illness; alcohol consumption of <30 g/day; upper quarter of the physical activity level; diet rich in vegetables and fruits, low in red meat and with some degree of replacement of rice with wheat; body mass index (BMI) of 18.5–23.9 kg/m2; and waist-to-hip ratio (WHR) <0.90 (men)/<0.85 (women).

Results

During a median of 7.2 years of follow-up, we identified 8784 incident T2DM. In multivariable-adjusted analyses, two important risk factors for developing T2DM were higher BMI and WHR. Compared with participants without any low-risk factors, the hazard ratio [95% confidence interval (CI)] for those with at least three low-risk factors was 0.20 (0.19, 0.22). Approximately 72.6% (64.2%, 79.3%) of the incident diabetes were attributable to the combination of BMI, WHR, diet and physical activity. The population attributable risk percentage (PAR%) of diabetes appeared to be similar for men and women, and higher among urban, older and obese participants.

Conclusions

Our findings indicate that adherence to a healthy lifestyle may substantially lower the burden of T2DM in the Chinese population.

Keywords: Diabetes mellitus, Type 2, Cohort studies, Health Behaviour, Lifestyle

12. Encephalitis after influenza and vaccination: a nationwide population-based registry study from Norway. Sara Ghaderi Ketil Størdal Nina Gunnes Inger J Bakken Per Magnus Siri E Håberg. *International Journal of Epidemiology, Vol 46, No. 5, Oct 2017, Pages 1618–1626*

https://academic.oup.com/ije/article-abstract/46/5/1618/4049580?redirectedFrom=fulltext

Background

Influenza is known to be associated with various neurological complications, including encephalitis. We conducted a registry-based study to assess the risk of encephalitis after influenza and A(H1N1)pdm09 vaccine.

Methods

Data from Norwegian national health registries during 2008–14 were linked using the unique personal identifiers given to all Norwegian residents (N = 5 210 519). Cox proportional-hazard models with time-varying variables were fitted to estimate hazard ratios (HRs) of encephalitis after influenza and A(H1N1)pdm09 vaccine, using the risk windows 0–7, 0–14, 0–30, 0–60, 0–90 and 0–180 days.

Results

In Norway, 684 172 individuals received an influenza diagnosis and 2793 patients were hospitalized with encephalitis during 2008–14. The risk of encephalitis increased after influenza: HR, 7-day risk window: 47.8 (95% confidence interval (CI): 35.8–63.8), and the HR decreased for longer risk windows; HR, 180-day risk window: 3.8 (95% CI: 3.1–4.7). HR of encephalitis after influenza during the 2009 main pandemic wave using a 7-day risk window was 30.0 (95% CI: 10.8–83.2). We found no differences in the risk of encephalitis after the seasonal influenza compared with influenza during the 2009 main pandemic wave; HR, 7-day risk window: 1.3 (95% CI: 0.4–4.3). A(H1N1)pdm09 vaccine was not associated with the risk of encephalitis: HR, 14-day risk window: 0.6 (95% CI: 0.2–2.1).

Conclusions

There was an increased risk of encephalitis following influenza but not after A(H1N1)pdm09 vaccine. The risk of encephalitis was highest in the first few weeks after influenza.

Keywords: Encephalitis, Meningitis, Influenza, Pandemic Influenza, A(H1N1)pdm09 Vaccination, Norway

13. Antiretroviral therapy use during pregnancy and adverse birth outcomes in South African women. Thokozile R Malaba Tamsin Phillips Stanzi Le Roux Kirsty Brittain Allison Zerbe Greg Petro Agnes Ronan James A McIntyre Elaine J Abrams Landon Myer. *International Journal of Epidemiology, Vol 46, No. 5, 1 Oct 2017, Pages 1678–1689*

https://academic.oup.com/ije/article-abstract/46/5/1678/4055952?redirectedFrom=fulltext

Background

Studies of antiretroviral therapy (ART) use during pregnancy in HIV-infected women have suggested that ART exposure may be associated with adverse birth outcomes. However, there are few data from sub-Saharan Africa where HIV is most common, and few studies involving the World Health Organization's (WHO's) recommended first-line regimens.

Methods

We enrolled consecutive HIV-infected pregnant women and a comparator cohort of uninfected women at a primary-level antenatal care facility in Cape Town, South Africa. Gestational assessment combined clinical history, examination and ultrasonography; outcomes included preterm (PTD), low birthweight (LBW) and small for gestational age (SGA) deliveries. In analysis we compared birth outcomes between HIV-infected and -uninfected women, and HIV-infected women who initiated ART before vs during pregnancy.

Results

In 1554 women (mean age 29 years) with live singleton births at time of analysis, 82% were HIV-infected, 92% of whom received a first-line regimen of tenofovir, emtricitabine and efavirenz. Overall, higher levels of PTD [22% vs 13%; odds ratio (OR) 1.94, 95% confidence interval (CI): 1.34, 2.82] and LBW (14% vs 9%; OR 1.62, 95% CI: 1.05, 2.29) were observed in HIV-infected vs uninfected women, although SGA deliveries were similar (9% vs 11%; OR 1.06, 95% CI: 0.71, 1.61). Adjusting for demographic characteristics and HIV disease measures, HIV-infected (vs HIV-uninfected) women had persistently increased odds of PTD [adjusted odds ratio (AOR) 2.03; CI 1.33, 3.10]; associations with LBW were attenuated (AOR 1.47; CI 0.90, 2.40). Among all HIV-infected women, there appeared to be no association between the timing of ART initiation (before or during pregnancy) and adverse birth outcomes.

Conclusions

These findings suggest that current WHO-recommended ART regimens appear relatively safe in pregnancy, although more data are required to understand the aetiology of preterm delivery in HIV-infected women using ART.

Keywords: HIV, Antiretroviral Therapy, Perinatal Outcomes, Prematurity, Low Birthweight, Small for Gestational Age

14. Waist–thigh Ratio: A Surrogate marker for Type 2 diabetes mellitus in Asian North Indian patients. Shivanjali Kumar, Kamal Kumar, Sarita Bajaj, Ranjana Kumar, Atul Gogia, Atul Kakar, Shrishti Paul Byotra. *Indian Journal of Endocrinology and Metabolism, Vol 22, No.1, Jan-Feb 2018, Pp-47*

http://www.ijem.in/article.asp?issn=2230-8210;year=2018;volume=22;issue=1;spage=47;epage=49;aulast=Kumar;type=0

Introduction

Diabetes is a major world-wide healthcare problem. Cost effective markers for screening and diagnosis of T2DM are the need of the day especially in developing and under-developed countries. Simple anthropometric measurements may help us in identifying individuals likely to have diabetes.

Material and Methods

Data from 1055 North-Indian subjects was analysed.

Results

Out of several anthropometric measurements studied, Waist-Thigh ratio (WTR) correlated significantly and positively with all three measures of diabetes i.e. FPG, RPG and PPG. ($P < .0001$) suggesting that it is the best predictor of diabetes. Subjects with diabetes had greater WTR (mean 2.088) than those without (mean1.842). ($P < .0001$). A thresh-hold effect was evident at a cut-off WTR of 2.3. Out of those subjects who were diagnosed to have diabetes by AACE/AHA guidelines, 82% had WTR greater than this value ($P < 0.001$).

Conclusion

WTR may prove to be a simple and inexpensive marker for detecting Type 2 diabetes. Larger studies are required to develop population norms.

Keywords: Type 2 Diabetes, T2DM, Waist–thigh Ratio

15. A prospective, observational study of osteoporosis in men. Narendra Kotwal, Vimal Upreti, Amit Nachankar, K V. S Hari Kumar. *Indian Journal of Endocrinology and Metabolism, Vol 22, No. 2, Jan-Feb 2018, Pp-62*

http://www.ijem.in/article.asp?issn=2230-8210;year=2018;volume=22;issue=1;spage=62;epage=66;aulast=Kotwal;type=0

Context

The number of men afflicted with osteoporosis is unknown.

Aims

This study aims to determine the prevalence of osteoporosis in men.

Settings and Design

This was a prospective, observational study.

Subjects and Methods

A total of 200 male attendants of patients attending endocrine outpatient department and who were >55 years were recruited for the study. All the patients with osteopenia and osteoporosis were advised lifestyle interventions, supplementation with calcium carbonate (1000–1500 mg/day) and 25-hydroxyl-Vitamin D (400–600 IU/day) and bisphosphonates if indicated. Vitamin D3 60,000 IU once a week for 8 weeks and once a month thereafter was prescribed to Vitamin D-deficient patients. Androgen-deficient patients were given replacements of either injectable testosterone or oral testosterone undecanoate.

Statistical Analysis Used

Two sample t-test and paired t-test were used to compare pre- and post-test parameters.

Results

Overall 80 (40%) subjects had low bone mass, 93 (43.5%) had Vitamin D deficiency/insufficiency, and 39 (19.5%) had androgen deficiency. Osteoporosis was found in 8.5% patients. All patients were above 70 years (Mean age: 73.82 ± 2.79 years). Seventy percentage of these patients had low serum testosterone and 70% of patients had Vitamin D deficiency/insufficiency. About 31.5% of patients had osteopenia (mean age of 67.47 ± 6.35 years). Thirty-five percentage of these patients were androgen deficient and 25% were Vitamin D-deficient/insufficient. Age >70 years, serum testosterone <3 ng/ml, Vitamin D <30 ng/ml were strong risk factors for osteoporosis. Vitamin D supplementation, androgen replacement, and bisphosphonate therapy had beneficial effect on bone mineral density (BMD).

Conclusions

Low bone mass was common (40%) in males over 55 years of age. Age >70 years, low androgen (<3 ng/ml), steroid use, and low Vitamin D (<20 ng/ml) were independent risk factors of male osteoporosis. Calcium and Vitamin D are effective in improving BMD. Androgen replacement has beneficial effect on BMD in hypogonadism patients.

Keywords: Osteoporosis, Men, Low Bone Mass

16. Prevalence of osteoporosis in apparently healthy adults above 40 years of age in Pune City, India. Nidhi S Kadam, Shashi A Chiplonkar, Anuradha V Khadilkar, Vaman V Khadilkar. *Indian Journal of Endocrinology and Metabolism, Vol 22, No. 1, Jan-Feb 2018, Pp-67*

http://www.ijem.in/article.asp?issn=2230-8210;year=2018;volume=22;issue=1;spage=67;epage=73;aulast=Kadam;type=0

Purpose

The aim of study was to assess the prevalence of osteoporosis and changes in bone mass with increasing age and compare bone health status of apparently healthy men, premenopausal and postmenopausal women.

Methods

Data were collected on anthropometric and sociodemographic factors in 421 apparently healthy Indian adults (women = 228), 40–75 years of age, in a cross-sectional study in Pune city, India. Bone mineral density (BMD) was measured by dual-energy X-ray absorptiometry at two sites-lumbar spine (LS) and left femur. Individuals were classified as having osteoporosis or osteopenia based on the World Health Organization criteria of T-scores.

Results

Mean age of study population was 53.3 ± 8.4 years. Of the total women, 44.3% were postmenopausal with 49.2 ± 3.5 years as mean age at menopause. Postmenopausal women showed a rapid decline in BMD with age till 50 years while men showed a gradual decline. Premenopausal women showed no significant decline in BMD with age ($P > 0.1$). Significantly lower T-scores were observed at LS in men compared to premenopausal ($P < 0.05$). At left femur, T-scores were lower in men compared to premenopausal women ($P < 0.05$) but not postmenopausal women ($P > 0.1$). The prevalence of osteoporosis in men at LS was lower than postmenopausal women but higher than premenopausal women.

Conclusion

In Indian men, a low T-score compared to women indicates higher susceptibility to osteoporosis. In women, menopause causes a rapid decline in BMD. Therefore, both Indian men and postmenopausal women require adequate measures to prevent osteoporosis during later years in life.

Keywords: Osteoporosis, Adults, Bone Mass, Pune, India

Drug News

17. Independent prescription of medicines and diagnostic test advice by final year medical students in Punjab. Kashif Aziz , Hafiz M. Aeymon and Saba Batool. *Eastern Mediterranean Health Journal, Vol 23, No. 12, Dec, 2017.Pp-795*

http://www.emro.who.int/emhj-volume-23-2017/volume-23-issue-12/independent-prescription-of-medicines-and-diagnostic-test-advice-by-final-year-medical-students-in-punjab.html

Sale of medicines is not rigorously controlled in Pakistan. Therefore, medical students start prescribing drugs and advising diagnostic tests before they graduate. This cross-sectional study investigated the frequency of independent medical prescription by 180 stratified, randomly selected final year medical students from 3 public medical colleges in Punjab, Pakistan. Data were obtained by self-administered questionnaire. One hundred and twelve students had prescribed medicines independently without any supervision; 38 had performed a physical examination before prescribing; and 74 had advised and 49 interpreted diagnostic tests independently. Forty-four students had administered injectable drugs and one third of these were administered without seeing expiry dates. The most frequently prescribed drugs were nonsteroidal anti-inflammatory drugs (92%) and antibiotics (73%). The most frequently advised tests were complete blood cell count, chest X-ray and urine detailed reports. One hundred and twenty-seven participants thought that medical students should not prescribe drugs. There was a significant relationship between gender and household income and prescription practices. Many final year medical students had prescribed drugs and advised diagnostic tests before graduation.

Keywords: Prescription, Medicines, Diagnostic Test, Medical Students

Maternal and Child Health

18. Investigation of breastfeeding training based on BASNEF model on the intensity of postpartum blues. Marzieh Akbarzadeh , Sima Kiani Rad, Marzieh Moattari and Najaf Zare. *Eastern Mediterranean Health Journal, Vol 23, No. 12, Dec, 2017.Pp-830*

http://www.emro.who.int/emhj-volume-23-2017/volume-23-issue-12/investigation-of-breastfeeding-training-based-on-basnef-model-on-the-intensity-of-postpartum-blues.html

Postpartum blues is a major risk factor for the incidence of postpartum depression and disruption of breastfeeding. This semi-experimental study investigated the effect of breastfeeding training based on the BASNEF model on severity of postpartum blues in 2012. Four educational sessions based on the BASNEF model were held separately for pregnant women and their mothers, mothers-in-law and spouses. The control group received routine care at the clinic. After delivery, women's knowledge of and attitude towards postpartum blues were evaluated using the Zung Self-Rating Depression Scale. There were significant differences between the groups regarding mean scores of knowledge, mothers' evaluation of behaviour outcomes, attitude, and enabling factors. Also, the mean score for postpartum blues was significantly lower in the intervention group compared to the control group. In conclusion, training based on the BASNEF model had a positive effect on maternal knowledge and attitude and, consequently, the intensity of postpartum blues. Further studies are required to determine the reliability and effectiveness of this method.

Keyword: Breastfeeding, postpartum depression, Maternal and Child Health, BASNEF model

19. Maternal and infantile adiponectin as marker for anthropometric parameters of lactating mothers and their breast-fed infants. Ahmed Ragab Fakhreldin. *Indian Journal of Endocrinology and Metabolism, Vol 22, No. 1, Jan-Feb 2018, Pp- 16*

http://www.ijem.in/article.asp?issn=2230-8210;year=2018;volume=22;issue=1;spage=16;epage=22;aulast=Fakhreldin;type=0

Background

Breast milk adiponectin could play a role in the regulation of infants' growth during lactation.

Aim of Work

The aim is to evaluate adiponectin concentration in human milk and to investigate its relationship with serum adiponectin concentration in lactating mothers and their breastfed infants and with anthropometric parameters of infants and mothers.

Materials and Methods

Sixty healthy term infants and their healthy lactating mothers are included at infant age of 1 month then repeated again at the age of 4 months. All subjects included in this study were subjected to history, clinical examination, investigations including serum level of adiponectin of infants and their mothers by RIA test, human milk level of adiponectin by ELISA test.

Results

There was a significant decrease in serum adiponectin of infant and mothers and maternal breast milk at the age of 4 months when compared to them at the age of 1 month. There was a significant positive correlation between infant serum adiponection, maternal serum adiponectin and breast milk adiponectin at infant's age of 1 month and at infant's age of 4 months. There was a significant negative correlation between maternal serum adiponectin and BMI of mothers. There was a significant negative correlation between infant serum adiponectin and their weight and length of infants at the age of 1 month and at the age of 4 months.

Conclusions: There's a metabolic link between mothers and their infants through breast milk during the first 6 months of life. A gradual decline in adiponectin level in maternal breast milk is associated with a gradual increase in infant growth up to 6 months of age.

Keywords: Maternal and Child Health, Infant Growth, Breast Milk, Breastfeeding

Neonatal Mortality

20. Survival analysis of the association between antenatal care attendance and neonatal mortality in 57 low- and middle-income countries. David T Doku Subas Neupane. *International Journal of Epidemiology, Vol 46, No. 5, Oct 2017, Pages 1668–1677*

https://academic.oup.com/ije/article/46/5/1668/3960260

Background

Neonatal mortality is unacceptably high in most low- and middle-income countries (LMICs). In these countries, where access to emergency obstetric services is limited, antenatal care (ANC) utilization offers improved maternal health and birth outcomes. However, evidence for this is scanty and mixed. We explored the association between attendance for ANC and survival of neonates in 57 LMICs.

Methods

Employing standardized protocols to ensure comparison across countries, we used nationally representative cross-sectional data from 57 LMICs (N = 464 728) to investigate the association between ANC visits and neonatal mortality. Cox proportional hazards multivariable regression models and meta-regression analysis were used to analyse pooled data from the countries. Kaplan-Meier survival curves were used to describe the patterns of neonatal survival in each region.

Results

After adjusting for potential confounding factors, we found 55% lower risk of neonatal mortality [hazard ratio (HR) 0.45, 95% confidence interval (CI) 0.42–0.48] among women who met both WHO recommendations for ANC (first visit within the first trimester and at least four visits during pregnancy) in pooled analysis. Furthermore, meta-analysis of country-level risk shows 32% lower risk of neonatal mortality (HR 0.68, 95% CI 0.61–0.75) among those who met at least one WHO recommendation. In addition, ANC attendance was associated with lower neonatal mortality in all the regions except in the Middle East and North Africa.

Conclusions

ANC attendance is protective against neonatal mortality in the LMICs studied, although differences exist across countries and regions. Increasing ANC visits, along with other known effective interventions, can improve neonatal survival in these countries.

Keywords: Survival Analysis, Neonatal Mortality, Antenatal Care, Low- and middle-Income Countries

Pregnancy

21. Association between pre-pregnancy overweight and obesity and children's neurocognitive development: a systematic review and meta-analysis of observational studies. Celia Álvarez-Bueno Ivan Cavero-Redondo Lidia Lucas-de la Cruz Blanca Notario-Pacheco Vicente Martínez-Vizcaíno. *International Journal of Epidemiology, Vol 46, No. 5, Oct 2017, Pages 1653–1666*

https://academic.oup.com/ije/article-abstract/46/5/1653/3962753?redirectedFrom=fulltext

Background

Obesity and overweight during pregnancy have been negatively associated with fetal and offspring neurodevelopment. The aim of this systematic review and meta-analysis was to assess the effect of the relationship between pre-pregnancy overweight and obesity with children's neurocognitive development.

Methods

We systematically searched MEDLINE, EMBASE, the Cochrane Library and the Web of Science databases from their inception through February 2017 for follow-up studies comparing the relationship between pre-pregnancy weight status and children's cognition. The Mantel-Haenszel fixed-effects method was used to calculate pooled effect size (ES) values and their corresponding 95% confidence intervals (CIs) comparing children's neurocognitive development between pre-pregnancy normal weight, as reference, with overweight and obesity categories.

Results

Fifteen articles were included in the systematic review, and nine of them in the meta-analysis. The pooled ES values for overweight and obese mothers were −0.02 (95% CI: −0.05 to 0.02) and −0.06 (95% CI: −0.09 to −0.03), respectively. The pooled ES for the relationship between pre-gestational excess weight (overweight and obesity) and children's neurocognitive development was −0.04 (95% CI: −0.06 to −0.02).

Conclusions

Pre-pregnancy obesity might have negative consequences on the neurocognitive development of offspring.

Keywords: Pregnancy, Obesity, Children, Cognition, Cognitive Function, Neurocognitive Development

22. Prevalence of hypothyroidism in term pregnancies in North India. Bharti Kalra, Meenu Choudhary, Meenakshi Thakral, Sanjay Kalra. *Indian Journal of Endocrinology and Metabolism, Vol 22, No. 1, Jan-Feb 2018, 13*

http://www.ijem.in/article.asp?issn=2230-8210;year=2018;volume=22;issue=1;spage=13;epage=15;aulast=Kalra;type=0

Background

Hypothyroidism is common in pregnancy. No study has determined the prevalence of hypothyroidism in term pregnancies in India.

Aim

This study aims to determine the prevalence and correlates of hypothyroidism in women who delivered at a center in Karnal, Haryana, North India.

Results

Indoor records of all women who had delivered at this centre from April 2016 to March 2017 were reviewed. The prevalence of hypothyroidism was 12.3%, of which 15.5% were diagnosed during pregnancy. The dose requirement of L-thyroxine ranged from 25 to 200 µg (mean 76.38 +- 43.02). With this, 80% were able to achieve trimester-specific thyroid-stimulating hormone targets. Hypothyroidism did not correlate with any medical or obstetric complications.

Conclusion

Hypothyroidism is common in term pregnancies. If treated adequately, healthy fetomaternal outcomes can be achieved.

Keywords: Pregnancy, Hypothyroidism, North India

23. Maternal and perinatal outcome in gestational diabetes mellitus in a Tertiary Care Hospital in Delhi. Rajesh Kumari, Venus Dalal, Garima Kachhawa, Ipshita Sahoo, Rajesh Khadgawat, Reeta Mahey, Vidushi Kulshrestha, Perumal Vanamail, JB Sharma, Neerja Bhatla, Alka Kriplani. Indian Journal of Endocrinology and Metabolism, Vol 22, No. 1, Jan-Feb, 2018, Pp-116

http://www.ijem.in/article.asp?issn=2230-8210;year=2018;volume=22;issue=1;spage=116;epage=120;aulast=Kumari;type=0

Background

Gestational diabetes mellitus (GDM) is defined as a carbohydrate intolerance first diagnosed in pregnancy and may be associated with adverse maternal and perinatal outcome.

Aim

The aim of the study was to determine the maternal and perinatal outcome in GDM during pregnancy.

Materials and Methods

It is a retrospective analysis of women diagnosed with GDM who got antenatal care and delivered in our hospital in previous 5 years. Another 191 women with normal pregnancy without GDM and other medical conditions were taken as control. The baseline characteristics (age, body mass index, religion, and socioeconomic status) were noted in all cases. Diagnosis of GDM was made using oral glucose tolerance test with 75 g glucose. GDM patients were started on diet following which insulin or oral hypoglycemic agents were given if required. Maternal and perinatal outcome was noted in all women.

Results

The prevalence of GDM was 5.72% (170/2970). Most patients (79.41%) could be controlled on diet alone. However, 21 (12.35%) needed insulin and 14 (8.23%) needed oral hypoglycemic agents. Middle socioeconomic status was more common in GDM than control and pregnancy-induced hypertension was more common in GDM (13.5%) than in control (6.3%) ($P = 0.019$). Mode of delivery was not different in two groups. Instrumental deliveries and postpartum hemorrhage were also similar. However, mean birth weight was significantly higher in GDM (2848 ± 539 g) than in control (2707 ± 641 g) ($P = 0.004$). Incidence of large-for-date babies was also

higher (28.2%) in GDM than control (19.4%) (P = 0.005). In neonatal complication, hypoglycemia was significantly higher in GDM (20.6%) than in control (5.2%) (P = 0.001). However, the incidence of hyperbilirubinemia and congenital malformations was not significantly different in two groups.

Conclusion

The prevalence of GDM was 5.72% in this study. Adequate treatment of GDM on diet, oral hypoglycemic agents, or insulin to achieve euglycemia can achieve near-normal maternal and neonatal outcome.

Keywords: Maternal and Perinatal Outcome, Pregnancy, Tertiary Care Hospitals, Delhi

Public Health

24. Health risks of climate change in the World Health Organization South-East Asia Region. Kathryn J Bowen, , Kristie L Ebi. *WHO South- East Asia Journal of Public Health, Vol 6, No. 2, Sept 2017 Pp-3*

http://www.searo.who.int/publications/journals/seajph/issues/seajph2017v6n2p3.pdf?ua=1

Countries in the World Health Organization (WHO) South-East Asia Region are particularly vulnerable to a changing climate. Changes in extreme weather events, undernutrition and the spread of infectious diseases are projected to increase the number of deaths due to climate change by 2030, indicating the need to strengthen activities for adaptation and mitigation. With support from the WHO Regional Office for South-East Asia and others, countries have started to include climate change as a key consideration in their national public health policies. Further efforts are needed to develop evidence-based responses; garner the necessary support from partner ministries; and access funding for activities related to health and climate change. National action plans for climate change generally identify health as one of their priorities; however, limited information is available on implementation processes, including which ministries and departments would be involved; the time frame; stakeholder responsibilities; and how the projects would be financed. While progress is being made, efforts are needed to increase the capacity of health systems to manage the health risks of climate change in South-East Asia, if population health is to be protected and strengthened while addressing changing weather and climate patterns. Enhancing the resilience of health systems is key to ensuring a sustainable path to improved planetary and population health.

Keywords: Climate Change, Extreme Weather Events, Health Systems, Infectious Diseases, Undernutrition

25. Online media coverage of air pollution risks and current policies in India: a content analysis. Nandita Murukutla, , Nalin S Negi, , Pallavi Puri, , Sandra Mullin, , Lesley Onyon. *WHO South- East Asia Journal of Public Health, Vol 6, No. 2, Sept 2017, Pp-41*

http://www.searo.who.int/publications/journals/seajph/issues/seajph2017v6n2p41.pdf?ua=1

Background

Air pollution is of particular concern in India, which contains 11 of the 20 most polluted cities in the world. Media coverage of air pollution issues plays an important role in influencing public opinion and increasing citizen demand for action on clean air policy. Hence, this study was designed to assess news coverage of air pollution in India and its implications for policy advancement.

Methods

Articles published online between 1 January 2014 and 31 October 2015 that discussed air pollution in India were systematically content analysed. From 6435 articles in the national media and 271 articles in the international media, a random selection of 500 articles (400 from national and 100 from international media) were analysed and coded by two independent coders, after high inter-rater reliability (kappa statistic above 0.8) was established.

Results

There was an increase in the number of news stories on air pollution in India in the national media over the study period; 317 (63%) stories described the risk to health from air pollution as moderately to extremely severe, and 393 (79%) stories described the situation as needing urgent action. Limited information was provided on the kinds of illnesses that can result from exposure. Less than 30% of stories in either media specifically mentioned the common illnesses resulting from air pollution. Very few articles in either media mentioned the population groups most at risk from air pollution, such as children or older people. Vehicles were presented most often as the cause of air pollution in India (in over 50% of articles in both national and international media). Some of the most important sources of air pollution were mentioned less often: 6% of national and 18% of international media articles mentioned unclean sources of household energy; 3% of national and 9% of international media articles mentioned agricultural field burning. Finally, the

majority of articles (405; 81%) did not mention any specific institution or organization – such as the government or industry groups – as the primary responsible stakeholder, thus leaving ambiguous the organizations whose leadership was necessary to mitigate air pollution.

Conclusion

Gaps exist in the current media discourse on air pollution, suggesting the need for strengthening engagement with the media as a means of creating citizen engagement and enabling policy action. Through greater elaboration of the health burdens and evidence-based policy actions, the media can play a critical role in galvanizing India's action on air quality. These data may suggest opportunities for media advocacy and greater public and policy engagement to address issues around air quality in India.

Keywords: Air Pollution, Content Analysis, India, Media Advocacy, News Coverage

26. Sanitation safety planning as a tool for achieving safely managed sanitation systems and safe use of wastewater. Mirko S Winkler, Darry Jackson, David Sutherland, Payden, Jose Marie U Lim, Vishwanath Srikantaiah, Samuel Fuhrimann, Kate Medlicott. *WHO South-East Asia Journal of Public Health, Vol 6, No. 2, Sept 2017, Pp- 34*

http://www.searo.who.int/publications/journals/seajph/issues/seajph2017v6n2p34.pdf?ua=1

Increasing water stress and growing urbanization force a greater number of people to use wastewater as an alternative water supply, especially for irrigation. Although wastewater irrigation in agriculture has a long history and substantial benefits, without adequate treatment and protective measures on farms and in markets, use of wastewater poses risks to human health and the environment. Against this background, the World Health Organization (WHO) published Guidelines for the safe use of wastewater, excreta and greywater in agriculture and aquaculture, in

2006. The Sanitation safety planning: manual for safe use and disposal of wastewater, greywater and excreta – a step-by-step risk-based management tool for sanitation systems – was published by WHO in 2016 to put these guidelines into practice. Sanitation safety planning (SSP) can be applied to all sanitation systems, to ensure the systems are managed to meet health objectives. This paper summarizes the pilot-testing of the SSP manual in India, Peru, Portugal, Philippines, Uganda and Viet Nam. Also reviewed are some of the key components of the manual and training, and an overview of SSP training and dissemination efforts and opportunities for implementation in the WHO South-East Asia Region. Lessons learnt during the piloting phase show how reducing health risks can be surprisingly easy, even in a low-income setting, especially when combining many smaller measures. The SSP approach can make an important contribution towards Sustainable Development Goal target 6.3, by reducing pollution, eliminating dumping and minimizing the release of hazardous chemicals and materials, thereby halving the proportion of untreated wastewater and substantially increasing recycling and safe reuse globally.

Keywords: Agriculture, Aquaculture, Excreta Reuse, Sanitation Safety Planning, Sustainable Development Goals, Wastewater Reuse

27. Rural recruitment and retention of health workers across cadres and types of contract in north-east India: a qualitative study. Preety R Rajbangshi, Devaki Nambiar, Nandini Choudhury, Krishna D Rao. *WHO South- East Asia Journal of Public Health, Vol 6, No. 2, Sept 2017, Pp- 51*

http://www.searo.who.int/publications/journals/seajph/issues/seajph2017v6n2p51.pdf?ua=1

Background

Like many other low- and middle-income countries, India faces challenges of recruiting and retaining health workers in rural areas. Efforts have been made to address this through contractual appointment of health workers in rural areas. While this has helped to temporarily bridge the gaps in human resources, the overall impact on the experience of rural services across cadres has yet to be understood.

This study sought to identify motivations for, and the challenges of, rural recruitment and retention of nurses, doctors and specialists across types of contract in rural and remote areas in India's largely rural north-eastern states of Meghalaya and Nagaland.

Methods

A qualitative study was undertaken, in which 71 semi-structured interviews were carried out with doctors (n = 32), nurses (n = 28) and specialists (n = 11). In addition, unstructured key informant interviews (n = 11) were undertaken, along with observations at health facilities and review of state policies. Data were analysed using Ritchie and Spencer's framework method and the World Health Organization's 2010 framework of factors affecting decisions to relocate to, stay in or leave rural areas.

Results

It was found that rural background and community attachment were strongly associated with health workers' decision to join rural service, regardless of cadre or contract. However, this aspiration was challenged by health-systems factors of poor working and living conditions; low salary and incentives; and lack of professional growth and recognition. Contractual health workers faced unique challenges (lack of pay parity, job insecurity), as did those with permanent positions (irrational postings and political interference).

Conclusion

This study establishes that the crisis in recruiting and retaining health workers in rural areas will persist until and unless health systems address the core basic requirements of health workers in rural areas, which are related to health-sector policies. Concerted attention and long-term political commitment to overcome system-level barriers and governance may yield sustainable gains in rural recruitment and retention across cadres and contract types.

Keywords: Contractual Health Workers, Health Workers, India, Permanent Health Workers, Rural Recruitment, Rural Retention

28. Climate conditions, workplace heat and occupational health in South-East Asia in the context of climate change. Tord Kjellstrom, Bruno Lemke, Matthias Otto. *WHO South-East Asia Journal of Public Health, Vol 6, No. 2, Sept 2017, Pp- 15*

http://www.searo.who.int/publications/journals/seajph/issues/seajph2017v6n2p15.pdf?ua=1

Occupational health is particularly affected by high heat exposures in workplaces, which will be an increasing problem as climate change progresses. People working in jobs of moderate or heavy work intensity in hot environments are at particular risk, owing to exposure to high environmental heat and internal heat production. This heat needs to be released to protect health, and such release is difficult or impossible at high temperatures and high air humidity. A range of clinical health effects can occur, and the heat-related physical exhaustion leads to a reduction of work capacity and labour productivity, which may cause substantial economic losses. Current trends in countries of the World Health Organization South-East Asia Region are towards higher ambient heat levels during large parts of each year, and modelling indicates continuing trends, which will particularly affect low-income individuals and communities. Prevention activities need to address the climate policies of each country, and to apply currently available heat-reducing technologies in workplaces whenever possible. Work activities can be adjusted to reduce exposure to daily heat peaks or seasonal heat concerns. Application of basic occupational health principles, such as supply of drinking water, enforcement of rest periods and training of workers and supervisors, is essential.

Keywords: Climate, Heat Stress, Occupation, South-East Asia, Wet Bulb Globe Temperature