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### Factors associated with burden metabolic syndrome diseases in urban Brazilian population: a multilevel analysis

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**Background:** The prevalence of the metabolic syndrome (MS) is constantly increasing. Studies reveal that neighborhood may offer opportunities or barriers to adopt healthy habits but less is known about the association between local in which people live and the characteristics of the environment with the MS.

**Aims:** Identify the association between variables of the built and social environment and burden metabolic syndrome diseases (BMSD) in an urban Brazilian population.

**Methods:** Participants were selected from the Surveillance of Risk Factors for Chronic Diseases through Telephone Interview (VIGITEL). For the present study, sample from the years 2008–2010 from the city of Belo Horizonte were used. BMSD was defined as the self-reported of at least two of the following factors: diabetes, dyslipidemia, hypertension and obesity. Socio-demographic, health status and lifestyle habits were also used. To characterize the built and social environment, we used geo-referenced data of places for physical activity, population density, healthy food stores, neighborhood income and homicide rate. For data analysis we used weighted multilevel logistic regression.

**Results:** We studied 4,027 adults (40.13% men and 59.87% women, mean age 45.13 years) in the urban area of Belo Horizonte, Brazil. Cluster variability of BMSD between the neighborhoods was observed (median OR = 1.33). It was observed that individuals living in neighborhoods with more places for practicing Physical Activities (OR = 0.98; 95%CI = 0.97–0.99) had decreased odds of BMSD. Furthermore, former smokers (OR = 1.32; 95%CI = 1.06–1.64), poorer self-reported health status (OR = 2.15; 95%CI = 1.16–4.01) and age (OR = 1.06, 95%CI = 1.05–1.07) had increased odds of BMSD.

**Conclusion:** Places for practicing physical activities may significantly influence health behaviors and outcomes as a BMSD.

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### Maximising the minimum: \$0.4 a day budget for school food program in Thailand

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The Thai National School Lunch Program has provided financial support of 13 Baht (US\$0.43) since 2001, for daily meals per student in child care centers (CCCs) and primary schools. This 13 Baht per head is allocated by Department of Local Administration. With no evidence on performance, this study aimed to explore food and nutrition management of the 13-Baht policy in CCCs. A cross-sectional survey was carried out in 409 CCCs in six regions of Thailand, recruited as national representatives, with a face-to-face survey questionnaire conducted among CCC caregivers. Only 3.1% of CCCs reported of receiving budget less than 13 Baht, while 9.59% receiving additional budget on top of 13 Baht. 42.75% of CCCs spent this 13 Baht on lunch, while 48.96% spent less than 13 Baht and 3.37% spent more than 13 Baht. Most of CCC caregivers (62.81%) perceived the 13 Baht budget as inadequate, 42.4% saw

20 Baht (US\$0.6/ 54% increase) as appropriate budget. Most daily foods provided were meat, vegetable, fruit and non-sweetened milk. However, some CCCs offered less healthy foods such as bakery (15.76%) and Thai dessert (14.95%) on regular basis. Furthermore, 60.2% of CCCs even allowed to serve energy-dense dessert, snack, soda and soft drink for children. On management aspect, 95.6% of CCCs managed this program with no nutritionist. 25.7% of CCCs prepared food without any plan while 35.7% used the national guideline by the Department of Health. There is an urgent need to strengthen CCCs food program, where local governments could have an important contribution.

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### The complex profiles of household food insecurity risk by BMI class: results from Portuguese family surveys (2011–2013)

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**Background:** Food insecurity (FI) and obesity seems to be linked. However, the scientific evidence provides mixed results for this association. We aimed at analysing the association between FI and body mass index (BMI) in a sample of Portuguese households.

**Key Methods:** Data from three surveys conducted by the Portuguese Directorate-General of Health, concerning FI of the Portuguese population, during the period 2011–2013. FI was evaluated using a psychometric scale adapted from the Brazilian Food Insecurity Scale and anthropometric data were self-reported. Data were collected by face-to-face interviews. Logistic regression models adjusted for socioeconomic/demographic variables, were used to identify the association between FI (assessed for the respondent household) and BMI (respondents in the surveys).

**Results:** A total of 3622 households were analysed. A higher risk of FI was found in overweight/obesity individuals (OR = 1.258; IC95% 1.079–1.466). When we analysed separately for the three FI categories, a significant increased risk was found just for households experienced low FI (OR = 1.313; IC95% 1.112–1.550), comparing to food secure households. Normal-weight individuals were significantly more likely to be in severe FI (OR = 2.814; IC95% 1.138–6.957) and low-weight individuals were overall protected of FI (OR = 0.788; IC95% 0.676–0.919 – for risk of low FI).

**Conclusion:** Profiles of household FI risk showed to be completely different by BMI class of households' respondents, revealing an unforeseen complexity. Our study suggests that low FI is associated with overweight/obesity and that severe FI associated with normal weight. These findings and their implications need to be further studied, set and assessed, at least for Portugal.

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### Impact of urban neighbourhood social environment on obesity – a systematic review of the literature

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**Background:** The social environments of urban neighbourhoods are increasingly recognised as potential upstream determinants of obesity.