A Global Analysis of Overweight Prevalence by Level of Human Development

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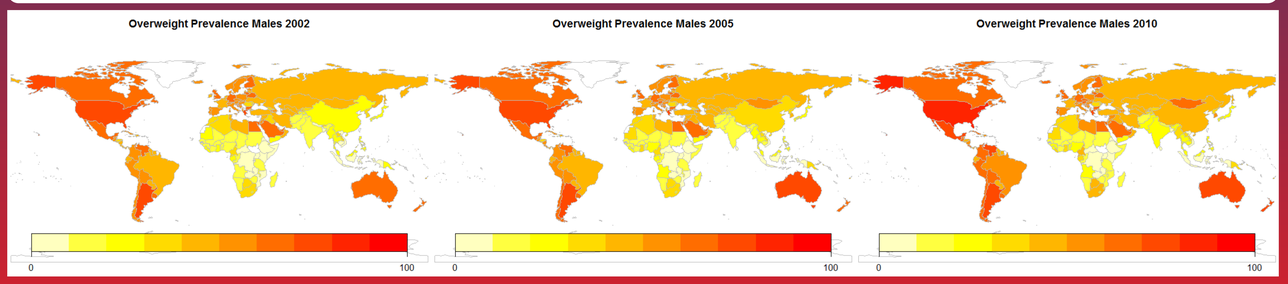
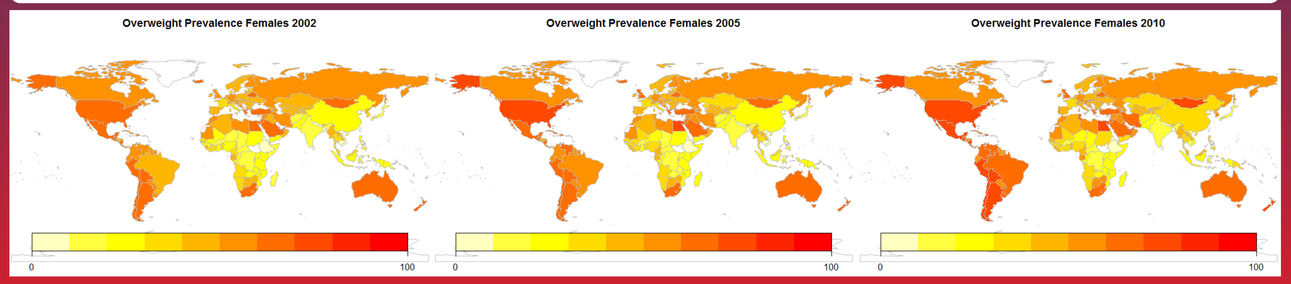
Overweight Prevalence – Males 2002, 2005, 2010



Overweight Prevalence – Females 2002, 2005, 2010



Introduction

- More than a billion adults are overweight
- Traditionally, underweight = "poor country's problem" and overweight = "rich country's problem"
- Rapid increase in economic development, urbanization, and industrialization → rise in overweight prevalence in developing countries
- No one-size-fits-all solution for all countries!

Research Question

- Analyze adult overweight prevalence in countries at varying degrees of development, measured by aggregate economic, social, and demographic aggregate indicators
- Expect the associations of these factors with overweight prevalence to vary between countries at different levels of development
- Interpret these results and suggest actions that countries could take, depending on their development level

Data

Variable	Source
Overweight prevalence (2002, 2005, 2010)	WHO Global Infobase
GDP per capita	World Bank
Unemployment rate	
% of population rural	
% of population aged 65+	
Average years of schooling	
Internet users per 100 people	
Coverage of McDonald's restaurants	Datablog of *The Guardian*

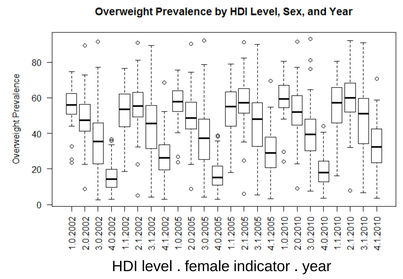
- 4 levels of human development from WHO
  - Very high (1), high (2), medium (3), low (4)

Methods

- Multiple linear regressions for each sex and year combination
- Panel data fixed effects model for all data
- 1-way ANOVA and pairwise testing to test differences between HDI levels
- Panel data fixed effects model for each HDI level

Results

- Internet users and McDonald's coverage generally not significant (p-value > 0.05), so not used in models by HDI levels, interesting since sedentary lifestyles and unbalanced diets often blamed as culprits of the "obesity epidemic"



- Means of overweight prevalence not the same among all 4 HDI levels

Fixed effects models by HDI level:

	Very High	High	Medium	Low
Log(GDP per capita)	**7.78 *** **	**2.84 ***	**8.75 *** **	**3.09 ***
Unemployment	0.0405	-0.0861	0.00154	-0.160
Proportion rural	**-0.423 *** **	-0.203	-0.186	**-0.757 *** **
Log(proportion 65+)	-0.295	**16.1 *** **	4.84	**10.9 ** **
Average years of schooling	-0.0467	0.132	0.205	**-1.00 ** **

*** denotes significance at 0.1%, ** at 1%, and * at 5%.

Conclusion

- Overweight prevalence is a global problem, but *not* a problem that all countries in the world can address in the same way
- Generally, GDP per capita and % of population aged 65+ positively associated, while % of population rural and average years of schooling negatively associated with overweight prevalence
- Association and significance vary by level of human development
- Causality cannot be determined definitely, but past trends and empirical cues provide an idea as to how certain policy actions could affect overweight prevalence
- Clear caution that associations do not imply causal effects
  - For example, GDP per capita and overweight prevalence are positively associated, but countries should not slow down development of their countries as a means to lower overweight prevalence

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