The Impact of Potential FDA Regulatory Actions on Smoking Prevalence among Youth and Adults: Findings from Global Adult Tobacco Survey and Global Youth Tobacco Survey

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Introduction

○ The **Food and Drug Administration** (FDA) has been granted the authority to regulate the **manufacturing, marketing, and sales** of tobacco products since 2009.

From FDA:

*"The **Family Smoking Prevention and Tobacco Control Act** (Tobacco Control Act) became law on June 22, 2009. It gives the Food and Drug Administration (FDA) the authority to regulate the manufacture, distribution, and marketing of tobacco products to protect public health. "The law prohibits "'reduced harm' claims" and requires "bigger, more prominent warning labels" to discourage minors and young adults from smoking. The act also restricts "cigarettes and smokeless tobacco retail sales to youth" and "tobacco product advertising and marketing to youth" by directing FDA to issue regulations.*

Aim

Assess the impact of potential FDA regulatory actions on smoking prevalence among youth and young adults using international data.

○ This study aims to inform the FDA of the effectiveness of **potential regulations** on tobacco products**.**

○ This study assesses how regulatory actions that fall within the FDA's authority impact cigarette smoking prevalence among **youth and adults using international data**.

Data

○ Policy data: **MPOWER** global survey.

The WHO/MPOWER has monitored the implementation of six proven tobacco-control measures in 196 participating countries in 2007/2008, 2010, 2012.

○ Tobacco outcome data:

• Global Youth Tobacco Survey (GYTS), 2007-2012,144 unique countries.

GYTS is a school-based survey designed to monitor tobacco use among youth on a global basis and to guide implementation and evaluation of tobacco control policies.

• Global Adult Tobacco Survey (GATS), 2008-2012, 18 unique countries.

GATS is a nationally representative household survey of adults 15 years of age or older. GATS is designed to monitor adult tobacco use, and to help implement and evaluate tobacco control policies.

Method

○ **MPOWER** policy data were linked to **GATS & GYTS** based on country and year. Policies were measured using dichotomous variables (1=policy is present; 0=policy is not present).

○ Smoking prevalence: a **dichotomous** variable for smoking any cigarette.

○ **Logistic** regressions were used to estimate the association between each policy related to cigarette warning labels, packaging, and marketing and smoking prevalence. Marginal effects and robust standard errors clustered at the country level are reported.

○ Socio-demographic variables were controlled (gender, age, and in GYTS: parents' smoking behaviors; In GATS: household size, wealth index, employment status, and education.).

○ Model 1: analyses without year fixed effects; Model 2: analyses with year fixed effects. Standard errors were clustered at the country level.
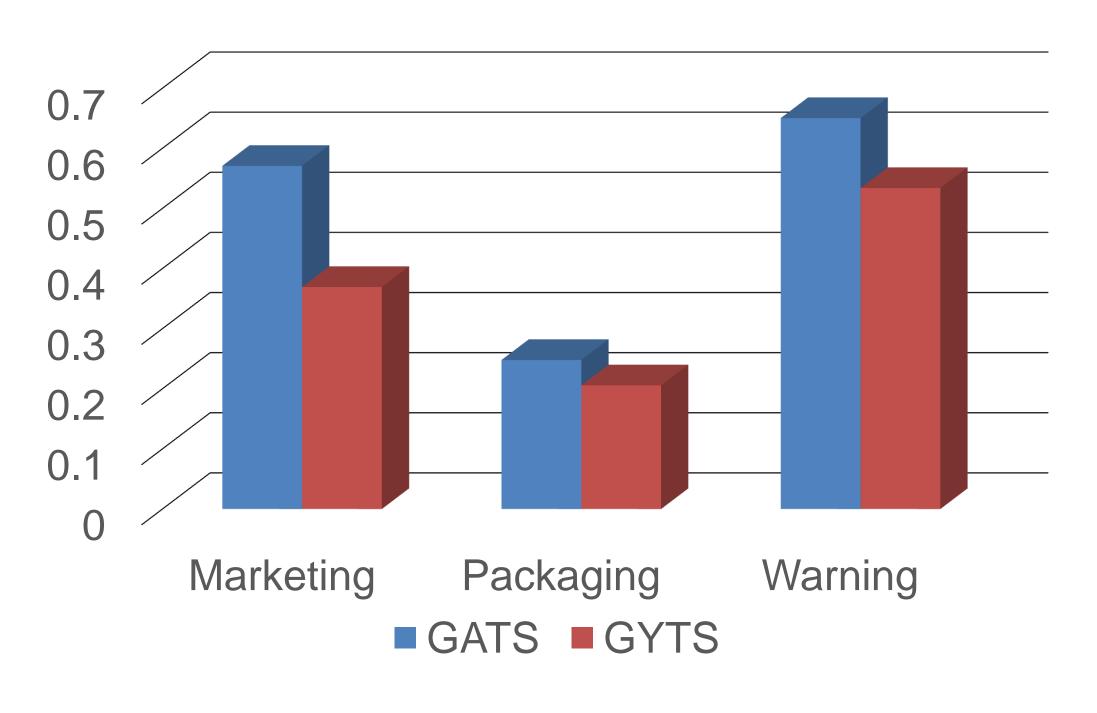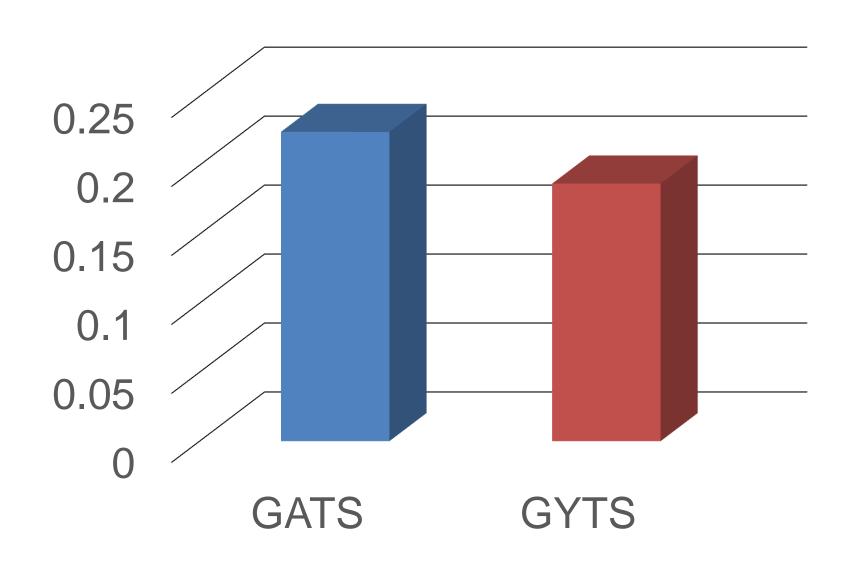
Figure 1, Average Policy Scales (0-1: none - maximum)

Figure 2, Smoking Prevalence

Results

Our results show that many policies related to cigarette warning labels, packaging, and marketing are associated with lower smoking prevalence.

Results-Analyses Using GATS Data

Variable	Model 1	Model 2
Marketing Bans		
Advertising: National TV & radio	-0.07***	-0.08***
	(0.02)	(0.02)
Advertising: Local magazines & newspapers	-0.07*	-0.08*
	(0.04)	(0.04)
Advertising: Billboards & outdoor advertising	-0.06*	-0.06
	(0.03)	(0.04)
Advertising: Internet	-0.07**	-0.06*
	(0.03)	(0.04)
Free distribution of tobacco products in the mail or through other means	-0.07*	-0.06*
	(0.03)	(0.04)
Promotional discounts	-0.06*	-0.07*
	(0.03)	(0.04)
Non-tobacco goods & services identified with tobacco brand names	-0.08***	-0.08***
	(0.03)	(0.03)
Brand name of non-tobacco products used for tobacco product	-0.09***	-0.10***
	(0.02)	(0.03)
Sponsored events	-0.09***	-0.11***
	(0.02)	(0.02)
Subnational laws or regulations exist banning some or all types of marketing	-0.09***	-0.11***
	(0.03)	(0.03)
Overall compliance of bans on promotion & sponsorship	-0.01*	0.001
	(0.004)	(0.004)
Overall compliance of ban on direct advertising	-0.02***	-0.02***
	(0.004)	(0.006)
Packaging		
Mandatory for the quit line number to appear on packaging or labeling.	-0.04	-0.10***
	(0.03)	(0.02)
Warning		
Coverage: mandated percentage of the principal display areas of the package; front & rear.	-0.002*	-0.002*
	(0.001)	(0.001)
Coverage: mandated percentage of the principal display areas of the REAR of the package.	-0.001***	-0.001***
	(0.0002)	(0.0004)
Warnings rotating on packages	-0.08*	-0.09*
	(0.04)	(0.05)
Warnings appear on each package & any outside packaging & labeling used in the retail sale.	-0.13***	-0.15***
	(0.03)	(0.03)

*** p<0.01, ** p<0.05, * p<0.1

Results- Analyses Using GYTS Data

Variable	Model 1	Model 2
Marketing Bans		
Advertising: International magazines & newspapers	-0.03**	-0.03**
	(0.01)	(0.01)
Sponsored events	-0.02	-0.04*
	(0.02)	(0.02)
Tobacco companies funding /making contributions (including in-kind contributions) to smoking prevention media campaigns, including those directed at youth	-0.06***	-0.07**
	(0.02)	(0.026)
Warning		
Warnings on packages written in the principal language(s) of the country.	-0.05	-0.06*
	(0.03)	(0.03)

*** p<0.01, ** p<0.05, * p<0.1

Summary and Policy Implications

Implications for FDA Regulatory Actions

Bans on advertising through TV, radio, prints, billboards, and the internet are associated with lower smoking prevalence among either youth or adults.

○ Bans on price-related marketing activities (free distribution of products and promotional discounts) are associated with lower smoking prevalence.

○ Bans on branding and sponsored events are associated with lower smoking prevalence.

○ Banning tobacco companies from funding smoking prevention campaigns, including those directed at youth, significantly reduce youth smoking prevalence.

○ Mandated inclusion of quit line numbers on packaging and labeling is associated with lower adult smoking prevalence.

○ Increased percentage of the principle display areas of the packaging, rotating warning labels, and warnings appearing on each and any outside packaging/labeling are associated with lower adult smoking prevalence.

Implications for other authorities/countries:

○ Sub-national laws/regulations on marketing also reduce smoking prevalence.

○ Countries should make sure warning labels are written in their native language.

Conclusions

Various policies related to warning labels, packaging, and marketing are shown to lower smoking prevalence among youth and adults.

Acknowledgments

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Economic Research Informing Tobacco Control Policy

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