Linking Global Youth Tobacco Survey (GYTS) data to tobacco control policy in Suriname

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Abstract

Objective. To use evidence from the Global Youth Tobacco Survey (GYTS) to inform tobacco-control policy in Suriname. **Materials and methods.** The GYTS was conducted in 2000, 2004 and 2009 among secondary school students (13 to 15 years) in a two-stage cluster sample design. **Results**. 2 744 students, age 13 to 15, participated. From 2000 to 2009, results showed an increased prevalence of "current use of cigarettes" and "other tobacco products" in females (31 and 98%). Additionally, students reported high exposure to second-hand smoking at home (56.6 to 46.6%) and in public places (67.8 to 53.3%). Less than half of all respondents were taught about the dangers of smoking in school. **Conclusion.** National smoking prevalence coincides with regional trends. The results of the GYTS provided the evidence-base towards developing comprehensive tobacco control legislation. Tobacco legislation was passed in 2013. Future GYTS will monitor legislation implementation and progress made in achieving WHO Framework Convention on Tobacco Control (FCTC) goals.

Keywords: tobacco products; tobacco use; legislation; adolescent; Suriname

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Resumen

Objetivo. Utilizar evidencia de la Encuesta Mundial de Tabaquismo en Jóvenes (EMTJ) para comunicar las políticas de control del tabaco en Surinam. **Material y métodos.** Las EMTJ se desarrollaron en los años 2000, 2004 y 2009 entre estudiantes de secundaria (de entre 13 y 15 años de edad) mediante diseño muestral en dos etapas. **Resultados.** Participaron en total 2 744 estudiantes. De 2000 a 2009, los resultados mostraron una mayor prevalencia de "uso actual de cigarrillos" y "otros productos de tabaco" en mujeres (31 y 98%). Asimismo, se evidenció un alto grado de exposición pasiva al humo de tabaco en hogares (56.6 a 46.6%) y en lugares públicos (67.8 a 53.3%), además de la exposición a publicidad protabaco (periódicos/revistas: 76.3 a 54.0%; vallas publicitarias: 77.4 a 52.6%). Menos de la mitad de los estudiantes que participaron fueron instruidos sobre los peligros de fumar en las escuelas. **Conclusión.** La prevalencia nacional de tabaquismo coincide con la tendencia regional. Los resultados de la EMTJ proporcionan evidencia exhaustivas sobre la legislación del control de tabaquismo aprobada en 2013. Futuras EMTJ pueden promover y monitorear la implementación de la norma y su progreso en la consecución de los objetivos de OMS y el Convenio Marco para el Control de Tabaco.

Palabras clave: productos de tabaco; consumo de tabaco; legislación; adolescente; Suriname

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Tobacco consumption is one of the leading preventable causes of morbidity and premature mortality in the world.[1] Tobacco companies have long targeted youth as "replacement smokers" to take the place of those who quit or die. The industry knows that addicting youth is its only hope for their commodity's future.[2] Children and adolescents should therefore be the primary focus of national strategies and programs targeted at preventing initiation and cessation of smoking.

The Global Youth Tobacco Survey (GYTS) is part of the global tobacco surveillance system, initiated by the World Health Organization (WHO) / Tobacco Free Initiative, the US Centers for Disease Control and Prevention (OSH / CDC) and other partners. It was designed to track tobacco consumption among youth in countries across the world, using a common methodology and protocol for data collection. This facilitates and permits evaluation, monitoring and data comparison across countries. The GYTS also assists countries in fulfilling their obligations under the WHO Framework Convention on Tobacco Control (FCTC) to generate comparable data within and among countries.

Suriname, a middle-income country located on the northern coast of the South American continent, has implemented three survey cycles of the GYTS: 2000, 2004, and 2009. In addition, the country ratified the FCTC in 2008 and passed comprehensive tobacco-control legislation in 2013. This article presents an overview of the Suriname GYTS methodology, the results of GYTS trends from 2000 to 2009, prior to the passage of tobacco control legislation, the evidence-base the GYTS data provided in legislative process and the role it can fulfill in legislation implementation, monitoring and evaluation.

Materials and methods

The GYTS is a nationally representative, school-based survey of students, 13 to 15 years old, designed to produce cross-sectional estimates for each country. The survey used a standardized, two-stage cluster sample design, core questionnaire, and data collection procedures to produce representative data. At the first stage, schools were selected with the probability of selection proportional to enrollment size of the identified classes. At the second stage, classes were randomly selected and all students in selected classes, present on the designated day, were eligible to participate. Each of the three GYTSs were conducted under the coordination of the Ministry of Health with support from the Pan American Health Organization (PAHO) and CDC.

The Suriname GYTS includes data on the prevalence of cigarette and other tobacco use as well as information on the determinants of tobacco use: exposure to secondhand smoke, access and availability, school curriculum, media and advertising, smoking cessation, and knowledge and attitudes. See table I for selected indicator definitions. The GYTS questionnaire was developed and administered according to survey protocol.[3] Final questionnaires consisted of 61 care questions and were traslated, in country, into Dutch.

SPSS 20 was used to analyze responses from 13 to 15 year olds. Per GYTS protocol, a weighting factor was applied to each student record.[3] This ensured the sample was representative of the total student population. Complex samples frequencies (or cstabulate) were used to create point estimates and 95% Confidence Intervals.

Complex samples logistic regression (cslogisitc) were used to compare male and female responses with a t-test. The percent change and *p*-values comparing 2000 to 2009 with a z test; 2004 data was not included. The $p \leq 0.05$ level of significance was used for both the year and male-female comparisons.

Results

The GYTS surveyed a total of 2 744 students, age 13 to 15, enrolled in the 1st, 2nd and 3rd grades of public and

Table I
Definitions of selected GYTS Indicators (2000, 2004, 2009)

Indicator	*Definition*
"Ever smoked cigarettes"	Ever experimenting with a cigarette, including one or two puffs.
"Current use of tobacco"	Tobacco use within the past 30 days
"Other tobacco products" (2000 and 2004)	"Chewing tobacco, snuff, dip, cigars, cigarillos, little cigars, and pipes"
"Other tobacco products" (2009)	"Cigars, cigarillos, little cigars, pipes, and water pipes"
"Smokeless tobacco products" (2009)	"Chewing tobacco, snuff, and dip,"

GYTS: Global Youth Tobacco Survey

private secondary schools. In 2000, of the 50 schools selected, the school response rate was 100%, the class response rate was 96.8%, and the student response rate was 84.5% with an overall response rate of 81.8%. 797 students, age 13 to 15, responded. In 2004, of the 25 schools selected, the school response rate was 100%, the class response rate was 100%, the student response rate was 94.4% with an overall response rate of 94.4%. 1 020 students age 13 to 15 responded. In 2009, of the 25 schools selected the school response rate was 100%, the class response rate was 100%, the student response rate was 93.4%, and the overall response rate was 93.4%. 927 students, age 13 to 15, responded.

Smoking prevalence

Table II illustrates the prevalence of tobacco use between 2000 and 2009. Students reported to have ever smoked cigarettes significantly decreased overall, males and females (39, 30 and 41%, respectively); but males were more likely than females to have ever smoked cigarettes in all surveyed years. Among students who reported they intended to smoke in the coming year, there was a significant decrease in males (35%) from 2000 to 2009. The prevalence in females, however, remained static during this timeframe. A significantly higher prevalence in males reported current use of cigarettes (within the past 30 days) over females in 2000. This gender gap disappeared in subsequent surveys, though. Students who reported current use of "other" tobacco products (within the past 30 days) increased significantly in females from 2000 to 2009 (98%). Additionally, a gender gap that existed in 2000, where males were significantly more likely than females to be current users of other tobacco products, disappeared in 2004 and 2009 surveys.

Exposure to Second-hand Smoke (SHS) and Beliefs

Table III indicates that while exposure to SHS inside and outside the home decreased significantly from 2000 to 2009, the reported prevalence was still high. In 2000, 56.6% of students reported being exposed to SHS at home in the past seven days. Reported exposure then decreased to 49.7% (2004) and later 46.6% in 2009. Males reported a significant decrease in prevalence from 2000 to 2009 regarding at least one parent who smokes; however, the total prevalence was still high as approximately half of all respondents reported a parent that smoked. Reported exposure to SHS in public places in the past seven days, while significantly decreased

Table II
Prevalence of tobacco use of surveyed 13 to 15 year olds in Suriname by year and sex

Prevalence	*Ever smoked cigarettes*				*Intentions to smoke in next year*			
	Total % (95% CI)	*Male % (95% CI)*	*Female% (95% CI)*	*M-F p-value*	*Total % (95% CI)*	*Male% (95% CI)*	*Female% (95% CI)*	*M-F p-value*
2000	48.3 (42.7 - 53.9)	57.1 (48.4 - 65.4)	41.1 (35.6 - 46.8)	.001	17.9 (13.7 - 23.0)	21.0 (13.8 - 30.7)	15.3 (11.1 - 20.9)	.176
2004	37.4 (33.8 - 41.0)	47.8 (42.0 - 53.7)	27.8 (23.0 - 33.2)	<.001	18.6 (14.7 - 23.3)	18.7 (12.9 - 26.3)	18.7 (14.9 - 23.2)	.973
2009	29.7 (24.5 - 35.5)	36.0 (29.5 - 43.2)	24.1 (18.6 - 30.6)	.004	14.8 (11.8 - 18.3)	13.6 (8.5 - 20.9)	15.5 (12.5 - 19.1)	.539
Percent change 2000-2009	-39	-30	-41		-17	-35	1	
p - value	<.001	<.001	<.001		.100	.028	.472	

Prevalence	*Current cigarette smoker*				*Current user of other tobacco products*			
	Total % (95% CI)	*Male % (95% CI)*	*Female% (95% CI)*	*M-F p-value*	*Total % (95% CI)*	*Male% (95% CI)*	*Female% (95% CI)*	*M-F p-value*
2000	10.8 (8.0 - 14.5)	14.7 (9.4 - 22.3)	7.1 (4.5 - 11.0)	.026	6.0 (4.4 - 8.1)	7.3 (5.0 - 10.4)	4.4 (2.8 - 6.9)	.049
2004	6.9 (5.2 - 9.1)	9.3 (6.3 - 13.5)	4.7 (2.7 - 8.2)	.073	4.4 (3.3 - 6.0)	4.4 (2.7 - 7.1)	4.4 (3.2 - 6.2)	.989
2009	12.1 (9.3 - 15.6)	14.0 (10.8 - 17.8)	10.1 (6.0 - 16.4)	.247	10.2 (8.5 - 12.1)	10.9 (7.6 - 15.4)	8.7 (6.0 - 12.5)	.441
Percent change 2000-2009	12	-5	31		70	49	98	
p - value	.284	.417	.175		.007	.087	.042	

Table III
Prevalence of factors influencing tobacco use of surveyed 13 to 15 year olds in Suriname by year and sex

Indicator	*Sex*	*Year*			*% Change 2000-2009*	*p>.05*
		2000	*2004*	*2009*		
Exposure to and belief about SHS						
Exposure to secondhand smoke at home in the past seven days	Total	56.6 (52.5-60.6)	49.7 (45.5-53.9)	46.6 (43.3 -49.9)	-18	<.001
	Male	57.4 (52.0-62.6)	52.6 (47.6-57.6)	44.2 (40.1-48.4)	-23	<.001
	Female	56.3 (51.7-60.8)	47.0 (42.3-51.8)	47.7 (41.7-53.7)	-15	.005
	M-F p-value	0.675	0.040	0.352		
At least one parent smokes	Total	54.8 (50.2-59.3)	50.9 (46.0-55.9)	50.2 (48.0-52.3)	-8	.020
	Male	51.5 (44.9-58.0)	51.5 (42.7-60.1)	45.8 (41.9-49.9)	-11	.048
	Female	58.0 (52.3-63.5)	50.5 (43.9-57.1)	53.1 (48.7-57.4)	-8	.066
	M-F p-value	.098	.861	.040		
Exposure to secondhand smoke in public place in the past seven days	Total	67.8 (63.7-71.6)	64.2 (59.0-69.0)	53.3 (49.5-57.1)	-21	<.001
	Male	70.0 (64.3-75.1)	67.8 (60.6-74.4)	51.4 (45.8-56.9)	-27	<.001
	Female	66.2 (61.4-70.6)	60.6 (55.9-65.0)	53.8 (49.1-58.3)	-19	<.001
	M-F p-value	0.195	0.021	0.463		
Believe smoke from other people's cigarettes are definitely harmful to health	Total	59.2 (53.9-64.4)	72.4 (68.9-75.6)	70.6 (67.1-73.8)	19	<.001
	Male	55.9 (49.1-62.6)	72.6 (66.8-77.8)	65.0 (57.2-72.0)	16	.038
	Female	62.1 (55.3-68.3)	72.0 (67.8-75.9)	74.9 (72.3-77.4)	21	.001
	M-F p-value	0.163	0.845	0.021		
Believe cigarette smoking is definitely harmful to health	Total	87.0 (83.7-89.8)	87.2 (82.8-90.6)	88.5 (86.2-90.5)	2	.205
	Male	85.9 (80.3-90.2)	86.4 (80.8-90.5)	84.9 (80.3-88.6)	-1	.371
	Female	87.8 (83.5-91.1)	87.9 (81.9-92.2)	91.2 (87.6-93.9)	4	.080
	M-F p-value	0.548	0.573	0.038		
Support public smoking bans	Total	87.6 (85.7-89.3)	91.0 (87.8-93.5)	54.1 (51.9-56.4)	-38	<.001
	Male	84.6 (79.8-88.4)	90.2 (86.5-93.0)	54.3 (49.4-59.0)	-36	<.001
	Female	90.2 (87.2-92.6)	91.7 (87.8-94.4)	53.9 (50.1-57.6)	-40	<.001
	M-F p-value	.060	.368	.907		
Access and availability						
Current smokers, purchased cigarettes in store, shop or street vender in the past 30 days	Total	31.6 (21.2-44.3)	23.4 (15.5-33.8)	29.8 (21.5-39.6)	-6	.397
	Male	41.4 (26.7-57.9)	22.6 (13.1-36.2)	31.1 (20.7-43.8)	-25	.100
	Female	13.6 (4.7-33.6)	24.9 (16.0-36.4)	31.5 (21.3-43.8)	132	.138
	M-F p-value	0.028	0.712	0.953		
Current smokers, prevented from purchasing cigarettes due to age in the past 30 days	Total	21.0 (11.0-36.3)	34.3 (27.7-49.5)	22.5 (16.6-29.8)	7	.419
	Male	11.8 (2.9-38.1)	39.8 (22.8-59.7)	28.1 (18.7-39.8)	138	.198
	Female	29.5 (11.3-57.9)	19.9 (7.4-43.7)	17.2 (6.4-38.5)	-42	.113
	M-F p-value	0.246	0.198	0.371		
Current smokers, stole cigarettes in the past 30 days	Total	12.9 (6.5-23.9)	3.3 (0.7-14.6)	16.8 (8.3-31.0)	30	.300
	Male	7.5(1.8-26.7)	3.1 (0.4-22.8)	14.5 (5.5-33.1)	93	.273
	Female	24.2 (11.6-43.7)	3.5 (0.5-22.7)	18.7 (8.9-35.10)	-23	.262
	M-F p-value	0.12	0.929	0.539		
School curriculum						
Taught about the dangers of smoking during this school year	Total	45.3 (40.3-50.4)	47.7 (43.5-51.8)	46.7 (40.3-53.2)	3	.362
	Male	40.3 (32.5-48.6)	45.2 (39.4-51.2)	46.4 (39.0-53.9)	15	.146
	Female	49.8 (43.6-56.1)	49.9 (43.7-56.1)	47.7 (40.5-55.0)	-4	.321
	M-F p-value	.068	.280	.710		

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Taught about the reasons teenagers smoke during this school year	Total	44.9 (40.1-49.8)	39.1 (34.8-43.6)	29.8 (25.7-34.3)	-34	<.001
	Male	47.2 (40.7-53.8)	36.8 (30.3-43.7)	28.9 (25.3-32.7)	-39	<.001
	Female	43.3 (37.8-49.0)	41.5 (35.0-48.4)	30.8 (25.9-36.2)	-29	<.001
	M-F p-value	.275	.329	.217		
Taught about the effects of smoking during this school year	Total	54.1 (48.4-59.6)	57.9 (54.8-61.0)	42.7 (37.3-48.2)	-21	<.001
	Male	48.2 (40.2-56.3)	58.8 (54.1-63.3)	41.9 (35.7-48.3)	-13	.082
	Female	59.0 (52.1-65.6)	56.9 (50.9-62.6)	43.8 (38.1-49.6)	-26	<.001
	M-F p-value	.022	.638	.497		
Media and advertising						
Noticed anti-tobacco messages at sporting or community events	Total	68.7 (64.0-73.0)	96.3 (91.9-98.3)	79.7 (76.6-82.5)	16	<.001
	Male	68.4 (62.9-73.3)	97.2 (95.1-98.4)	77.8 (72.4-82.4)	14	.006
	Female	69.3 (63.0-75.0)	95.4(88.0-98.4)	81.0 (77.6-84.0)	17	.001
	M-F p-value	0.777	0.219	0.210		
Aware of anti-smoking media messages in past 30 days	Total	74.7 (71.1-78.0)	79.5 (76.9-81.8)	52.0 (48.2-55.8)	-30	<.001
	Male	71.1 (66.4-75.5)	80.2 (76.4-83.4)	55.9 (46.4-64.9)	-25	<.001
	Female	77.7 (72.7-82.4)	78.7 (74.3-82.6)	49.3 (42.8-55.9)	-37	<.001
	M-F p-value	.080	.622	.335		
Aware of tobacco advertisements in newspapers or magazines in the past 30 days	Total	76.3 (73.4-79.0)	68.2 (64.1-72.0)	54.0 (49.3-58.7)	-29	<.001
	Male	80.0 (75.0-84.2)	68.5 (63.3-73.3)	53.4 (47.0-59.6)	-33	<.001
	Female	74.3 (70.4-77.8)	67.8 (61.5-73.5)	54.4 (48.9-59.7)	-27	<.001
	M-F p-value	.059	.835	.759		
Aware of tobacco advertisements on billboards (or posters) in the past 30 days	Total	77.4 (73.5-80.8)	74.7 (69.5-79.4)	52.6 (48.0-57.2)	-32	<.001
	Male	78.7 (73.5-83.2)	77.3 (71.0-82.6)	53.1 (48.8-57.3)	-33	<.001
	Female	76.6 (72.3)	72.2 (65.7-77.9)	51.8 (44.8-58.8)	-32	<.001
	M-F p-value	.371	.127	.730		
Own something with a cigarette brand logo	Total	22.3 (19.6-25.3)	18.5 (15.2-22.2)	13.8 (11.8-16.0)	-38	<.001
	Male	24.1 (19.8-28.9)	22.2 (18.0-27.1)	15.8 (12.7-19.4)	-34	<.001
	Female	20.7 (17.3-24.7)	15.2 (12.1-18.9)	12.3 (10.5-14.3)	-41	<.001
	M-F p-value	.296	.001	.036		
Smoking cessation						
Current smokers, ever feel like having a cigarette first thing in the morning	Total	40.3 (23.4-59.8)	27.9 (15.4-45.1)	35.5 (18.9-56.7)	-12	.352
	Male	48.0 (28.4-68.2)	28.0 (14.9-46.3)	35.9 (15.2-63.7)	-25	.201
	Female	25.0 (8.3-55.2)	27.9 (12.0-52.2)	34.3 (12.6-65.3)	37	.331
	M-F p-value	.166	.991	.923		
Current smokers, desire to stop smoking	Total	79.3 (63.5-89.4)	86.1 (69.4-94.4)	77.2 (62.3-87.4)	-3	.402
	Male	74.1 (60.0-84.4)	89.6 (68.8-97.1)	66.8 (49.9-80.2)	-10	.209
	Female	-*	79.1 (54.4-92.3)	92.4 (59.6-99.0)	-	-
	M-F p-value	-	0.308	0.116		
Current smokers, attempted to stop smoking in last 12 months	Total	72.7 (60.6-82.2)	67.3 (38.9-87.0)	77.8 (55.1-91.0)	7	.307
	Male	70.5 (50.1-85.0)	62.8 (25.4-89.3)	71.2 (49.8-86.1)	1	.478
	Female	86.6 (54.7-97.2)	75.1 (52.2-89.3)	83.1 (54.7-96.4)	-4	.403
	M-F p-value	0.331	0.461	0.329		
Current smokers, received professional help to stop smoking	Total	42.2 (28.7-57.0)	54.3 (41.1-66.9)	44.0 (32.8-55.9)	4	.421
	Male	42.7 (23.0-65.0)	56.7 (42.7-69.7)	36.7 (23.1-52.7)	-14	.305
	Female	42.6 (25.0-62.3)	49.8 (32.3-67.3)	50.1 (32.8-67.3)	18	.296
	M-F p-value	.999	.432	.211		

* Note: Excluded due to small cell size

from 67.8% (2000), to 64.2% (2004) then 53.3% (2009), was still high. From 2000 to 2009, the percentage of students that believed smoke from other people's cigarettes to be definitely harmful to health, significantly increased overall (19%), for males (16%) and females (21%). In 2009, females were significantly more likely than males to believe that smoke from other people's cigarettes was harmful to health. Conversely, there was a significant reduction in support for a smoking ban in public places from 2000 to 2009 in both sexes.

Access and availability

In 2000, males were significantly more likely to purchase cigarettes from store, shop or street vendor than females (41.4 vs. 13.6%). This gender difference disappeared however in 2004 and 2009. The prevalence of current smokers who were prevented from purchasing cigarettes due to their age, from 2000 to 2009, while not significant, increased for males by 138% but decreased for females by 42%. Current smokers who reported stealing cigarettes increased by 93% for males from 2000 to 2009 but decreased for females by 23% in that same period.

School curriculum

Reported health education in schools around tobacco was low. Data shows approximately half of all respondents received health information regarding tobacco while in school. Furthermore, from 2000 to 2009, males and females reported a significant decrease in learning the reasons why people their age smoke; and females reported a significant reduction in learning of the effects of tobacco use.

Media and advertising

Between 2000 and 2009, the prevalence of students who noticed anti-tobacco messages at sporting or community events significantly increased overall (16%), for males (14%), and females (17%). Conversely, males and females reported significant reductions in observed anti-tobacco messages in the media during the past month (25 and 37%, respectively). Awareness of tobacco advertising in periodicals (newspaper/ magazine), or billboards (posters was removed from the 2009 questionnaire) were all shown to significantly decrease, for both males and females, from 2000 to 2009. Additionally, ownership of an item with a tobacco logo also showed a significant decrease from 2000 to 2009, in both males (34%) and females (41%).

Smoking cessation

The prevalence of current smokers who reported the desire to stop smoking, and those that attempted to quit, remained static from 2000 to 2009. Additionally, no significant changes occurred between 2000 and 2009 for students who received professional help to stop smoking. While there was no statistically significant change for current smokers who ever feel like having a cigarette first thing in the morning, data shows a decreased prevalence in males and an increased prevalence in females.

Discussion

The first aim of this paper was to examine the prevalence and trends of tobacco use and tobacco-related indicators in youth prior to the country's development of comprehensive tobacco-control legislation. Analysis from 2000 to 2009 shows an increasing prevalence of tobacco use in females, thereby narrowing a previous gender gap. This finding is consistent with noted regional trends for this age group.[4] Parallel to this finding, 2000-2009 data shows an increase in the number of females reporting to want a cigarette first thing in morning with a simultaneous prevalence decrease in male respondents. While these findings are not statistically significant, they do suggest a need for targeted cessation interventions to females. Additionally, during this timeframe there was unequal access to purchase cigarettes at retailers. Though the data was not found to be statistically significant, males reported increasing difficulty to purchase cigarettes due to their age, whereas females reported increasing ease.

Use of other tobacco products was also shown to increase overall in this time period, but the increase in females was significant. Changes to the definition of "other" tobacco products in the most recent survey, however, may have inadvertently impacted these results. Subsequent GYTS surveys with this new definition will be helpful in assessing any emerging trends around alternative tobacco products.

Furthermore, there was a high reported exposure to second-hand smoke at home and in public places. While there was a significant increase in both males and females in the belief that second-hand smoke is harmful, that belief did not translate to action. Instead, analysis shows a significant decrease in youth support for smoke-free public places. It could be that the respondent's high exposure to parents and other adults that smoke has a normalizing effect on their view of tobacco use.[5]

Lastly, anti-tobacco messages at sport and community events were recognized significantly more in 2009,

by males and females, than in 2000. Interestingly though, pro and anti-tobacco messaging were noticed significantly less in 2009, compared to 2000, in the following mediums: newspapers and magazines, billboards (and posters), and ownership of an item with a tobacco logo. This significant decrease in noticed pro-tobacco messaging through traditional mediums may be due to the shifting trend of tobacco marketing to youth via social media and online.[6] Questions on these mediums were not included in these surveys however.

The second aim of this paper was to explore the role GYTS data played prior to passage of comprehensive tobacco control legislation and the role it will play in monitoring and evaluating legislation implementation. The GYTS data from all years (2000, 2004, and 2009) was included in evidence-based resource documents, fact sheets and training materials, to sensitize those who educate the population and key decision makers, to illustrate the need for comprehensive, tobacco-control legislation. It was also the GYTS data on youth's high exposure to second-hand smoke that helped shape the central messaging behind the need for comprehensive legislation – to protect Suriname's most vulnerable populations, including youth, workers, and residents of the interior, from the detrimental effects of tobacco. Furthermore, GYTS data on youth exposure to SHS in public places served as a touchstone for both health officials and Members of Parliament during the hospitality industry's lobbying against smoke-free establishments prior to Parliament's vote. On February 7, 2013, Parliament unanimously passed comprehensive, tobacco-control legislation, based on the WHO Framework Convention on Tobacco Control (FCTC) to encompassing that all indoor public places and workplaces must be smoke-free, including hospitality-industry establishments. Legislation S.B. 2013 no. 39 was enacted on June 7, 2013. Lastly, 2009 GYTS data serves as a baseline on the current status of youth and tobacco in Suriname. Future GYTS surveys will serve as a key monitoring and evaluation tool to ensure proper implementation of the national tobacco-control legislation and the progress made in achieving WHO FCTC goals.

A limitation of the GYTS is the methodology. As the GYTS is self-reported, there is the possibility of under or over-reporting of student's behavior or attitudes. Additionally, the structure of the question regarding the use of "other tobacco products" did not allow for a detailed analysis. While the 2009 survey differentiated the question on smokeless tobacco, compared to previous surveys, it is recommended that future surveys separate all included examples of "other tobacco products". Furthermore, electronic cigarettes should also be included in the definition of "other tobacco products," due to the increasing trend of adolescent use.[7]

Finally, questions on tobacco marketing to youth via social media and online should be included in future GYTS surveys as this is an increasing trend in the tobacco industry.[6]

Conclusion

GYTS data from all survey years helped to inform and sensitize decision makers about the situation on youth and tobacco in Suriname and the need for comprehensive tobacco-control legislation. The 2009 GYTS data provides a baseline for Suriname and will be used, along with subsequent GYTSs, to monitor and evaluate legislation implementation and national progress towards achieving WHO FCTC goals.

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