The Dominican Republic and the Marlboro Brand: A Cigarette Smoking Survey and Status Report

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A survey of cigarette smoking in Santo Domingo was conducted among residents of 499 households in two neighborhoods. Residents over 14 years old were classified as current smokers (34.6%), former smokers (11.3%), and never smokers (54.1%). Most of the 200 current smokers interviewed (83%) had started smoking by age 20, but over half (59%) were relatively light smokers, consuming ≤10 cigarettes per day. Remarkably for Latin America, smoking was nearly as common among women (32.9%) as among men (36.3%).

Over 90% of the interview subjects disapproved of smoking by adults, the practice being considered undesirable by most because of its effects on health. Most of the adolescents interviewed viewed smoking as a mark of maturity (82.3%) and as "in" among their friends (53.7%).

Even though few respondents understood the specific nature of health threats posed by smoking, health was the single most important factor motivating cessation. Most of the current smokers (87.0%) wanted to quit, and over two-thirds (67.5%) reported making at least one serious attempt to do so.

Tobacco industry figures show that between 1962 and 1988 the total apparent cigarette consumption of the Dominican Republic rose 3.7-fold. Most of that increase was the result of promotion by Philip Morris, which now dominates the Dominican market. At present cigarettes are heavily advertised without health warnings and are sold to minors without significant restrictions. Such activities should be of particular concern in this and other developing countries with high fertility rates and young populations.

Smoking in the Americas has been shifting southward. Cigarette smoking is still the leading cause of preventable death and disease in the United States of America. Although the practice became entrenched there over 60 years ago, it began to decline following the landmark 1964 report of the Surgeon General (*1*). Since then smoking has strengthened its hold in Latin America and the Caribbean, reaching alarming proportions in some of the more rapidly developing nations. By the mid-1980s, 100 000 Latin Americans were dying each year from smoking-attributable diseases. Today it appears that the epidemic can only advance as youths currently smoking pass into middle age (*2*).

Transnational cigarette companies have played the leading role in creating this ongoing catastrophe. Faced with declining markets at home in North America, they first encouraged penetration of protected Latin American markets by con-

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traband U.S. products. While local governments dithered, demand for the U.S. products soared. Indigenous firms found themselves unable to resist takeovers by the transnational firms. Afterward, cigarette types were shifted from short, dark-tobacco local varieties to longer filtered cigarettes filled with lighter-colored tobaccos; advertising stimulated demand for the new, more expensive varieties; and consumption rose (*3*).

Philip Morris has generally been the most aggressive and dynamic of the tobacco giants; and Marlboro, its "big red" brand, is now the best-selling cigarette in the world. The way Marlboro came to dominate the small cigarette market of the Dominican Republic fits the classic mould for such exploits in Latin America (*4*).

Columnists, authors who follow the tobacco industry (*3*, *4*), and several Surgeons General, most notably C. Everett Koop, have repeatedly voiced concern in the U.S. media about the impact of such activities on developing nations. However, Latin American smokers outside the U.S. only recently began to receive attention in the public health and preventive medical literature (*2*, *5*). Hence, there is little by way of published psychosocial data suited to developing the smoking cessation intervention programs urgently needed by Latin America's large smoking population.

The aim of the small study reported here was to make a modest contribution to such data. The study was based on a residential survey of cigarette smoking among 499 inhabitants of two typical neighborhoods in Santo Domingo, capital of the Dominican Republic. An assessment was made of the respondents' cigarette use and their perceptions about smoking, associated health risks, and cessation. The relevance of these findings was then considered with respect to cigarette advertising, national market trends, and the prospects for reducing tobacco-related health problems in the Dominican Republic.

SURVEY METHODS AND DATA ANALYSIS

The survey, conducted from 10 June 1990 to 22 May 1991, was based on home interviews with residents of 499 Santo Domingo households, using a previously field-tested questionnaire. The interviewer for the survey was a 21-year-old woman chosen because she was highly intelligent and well-known in the community. She was trained in interviewing and recording responses by the senior author at the same time that the questionnaire was being field tested.

The respondents were interviewed face-to-face in two adjoining neighborhoods, Villa Francisca and San Carlos, both typical of many of the Dominican Republic's urban residential tracts. These neighborhoods were crowded and moderately impoverished. A busy commercial thoroughfare bisected the study area, polluting the air. Upper respiratory infections were common.

The primary sampling units were sides of blocks chosen at random from locally published city maps (*6*). Of 18 selected block sides, two were rejected as unsafe for the interviewer. Along the remaining 16 block sides, all houses were included if a responsible, consenting adult resident was found to be present within two revisits. In each of these households, one adult resident was asked to identify all the inhabitants 15 years or over by age, sex, and cigarette smoking status (never smoker, current smoker, or former smoker).

From each household register a single resident 15 or older was then selected for a questionnaire-based interview. This selection was random, except that those listed as current and former smokers were given twice the selection probability of

those listed as never smokers. Thus, the probability of a given resident's selection for an interview depended on that resident's smoking status as well as the number of other residents in the home and their smoking status.

These selection probabilities ranged from 0.069 to 1 and yielded, as their reciprocals, unadjusted weighting coefficients ranging from 1 to 14.5. These unadjusted weights totalled 1 319.5, a sum 2.64 times the number of those actually interviewed (499). Accordingly, each weight was divided by 2.64, producing an adjusted-weight output file of n = 494. The exact size of the original sample (499) was not duplicated in the weighted data file because we were using software (7) that treated decimal weights as probabilities of duplicating the case.

To classify respondents by smoking status in the weighted sample, each was first asked whether he or she had smoked at least 100 cigarettes during his or her lifetime. Those 234 responding "no" were classified as nonsmokers (never smokers); those 200 responding "yes" who said they continued to smoke were classified as current smokers; and those 65 responding "yes" who said they had not continued were classified as nonsmokers (former smokers).

Regarding each smoking respondent's daily smoking frequency, this was selected from 23 frequency categories. Most questions on smoking and health were presented in the form of brief personalized statements by the respondent, to which the respondent answered by selecting "agree," "disagree," or "unsure." Since the frequency of "unsure" responses was usually negligible, the results have been presented as rates of agreement. Multiple selections were allowed for brand preference, possible reasons for smoking cessation, and methods used to stop. Regarding the respondents' use of alcohol, coffee, cigars, and chewing tobacco, answers about consumption of each were recorded only as "yes" or "no."

Data dealing solely with the gender, smoking status, and age of household residents include all of the 1 398 residents (see Table 1) whose presence was reported by proxy in each of the 499 study households. Analysis of all other variables is based on the weighted sample of 494 derived from the 499 people actually interviewed.

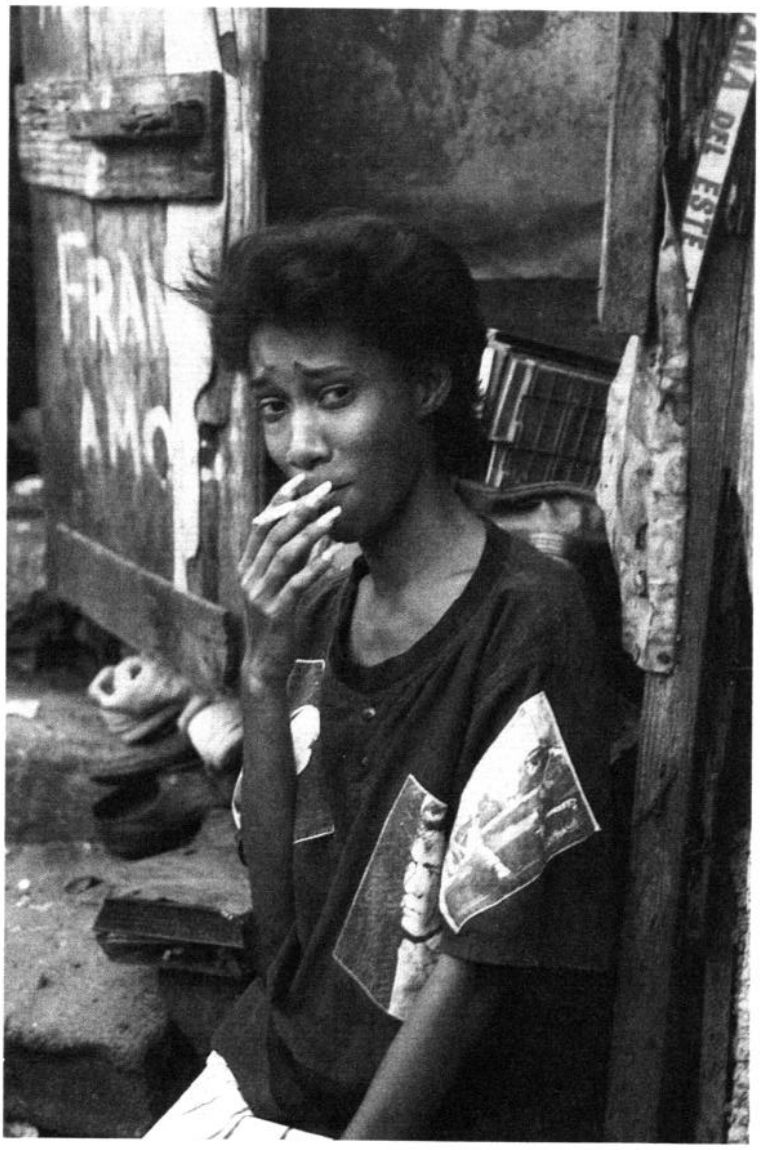
RESULTS

Characteristics of the Weighted Sample (n = 494)

As determined by the interviewer, the ethnic composition of the weighted sample was 11.8% black, 18.9% white, and

Table 1. Smoking status reported for 1 398 Dominicans residing in the 499 survey households, by gender. Never smoker = consumer of <100 cigarettes; current smoker = consumer of ≥100 cigarettes who has continued smoking; former smoker = consumer of ≥100 cigarettes who has stopped smoking.

	Females		Males		Totals	
Smoking status	No.	(%)	No.	(%)	No.	(%)
Never smokers	433	31.0	323	23.1	756	54.1
Current smokers	251	18.0	233	16.7	484	34.6
Former smokers	78	5.6	80	5.7	158	11.3
Totals	762	54.5	636	45.5	1 398	100.0



A 26-year-old smoker in Villa Francisca, Santo Domingo.

69.3% mulatto ("indio"). According to the respondents' replies, 29.8% were single, 21.3% married, 26.0% cohabiting, 18.3% divorced or separated, and 4.6% widowed. Mean ages in the weighted sample were 26.9 years (standard deviation = 11.8 years) for never smokers, 37.0 years (SD = 14.0) for current smokers, 42.6 years (SD = 14.8) for former smokers, and 33.1 years (SD = 14.4) overall. Only 15.2% of the sample was under 21 years old. Adult (≥21 years) male and female mean heights were 170 cm and 160 cm, respectively, while adult male and female weights averaged 52.4 kg and 43.1 kg, respectively. The most frequently listed occupations were "student" (13.6%) and "housewife," the latter accounting for a third of all females in the sample.[5] The average subject interviewed had nearly completed the eighth grade and shared with other household members a median monthly household income of RD$ 1 850, roughly equivalent to US$ 128.

[5]After "housewife" and "student" the frequency with which specific occupations were cited fell off very sharply. It also appears that many of those interviewed were actually unemployed or underemployed, and were merely stating what they were best trained to do. Some other occupations cited were "unemployed" (3.9%, a big underestimate), "laborer" (2.8%), "self-employed" (2.8%), "secretary" (2.5%), "businessman" (2.1%), and "taxi driver" (2.0%).

Demographic Analysis of Cigarette Use

As indicated in Table 1, 34.6% of the 1 398 study subjects identified by proxy (99% confidence interval = ±1.6%) were said to be current smokers. Within this group, smoking was said to be almost as common among females (32.9%) as among males (36.6%). Indeed, females (who outnumbered males 54.5% to 45.5% within the group) actually accounted for slightly over half (51.9%) of the reported smokers.

Most smokers among the survey respondents said they were relatively light smokers. That is, 58.5% reported smoking ≤10 cigarettes per day, 27.0% reported smoking 11–20, 9.5% reported smoking 21–40, and 5.0% reported smoking >40. The mean daily consumption by female smokers (12.6 cigarettes) was not significantly lower than that of male smokers (13.4, $T = 1.7$, $p = 0.09$). Females who smoked and had been pregnant at least once indicated that they had smoked during most (65.1%) of their pregnancies. Fifty-one percent of the housewives interviewed indicated they were current smokers.

Smokers had begun their habits as early as age 6 and as late as 44. However, nearly half (48.5%) had started by age 16, 82.5% by 20, and 95.5% by 25. On the average, males began their habits at 16.2 years of age, 1.7 years before females ($T = 2.2$, $p = 0.02$). Similarly, the heaviest smokers (>40 cigarettes per day) started 4.6 years earlier than the lightest smokers ($T = 2.8$, $p = 0.005$).

Among former smokers, the average age at cessation was 37 years (SD = 11.5). Women quit nearly 2 years earlier than men on the average, but that difference was not statistically significant in our small sample of former smokers (n = 65).

Young people (under 21) were heavily exposed to smoking behavior. Of those interviewed, 38.5% reported smoking by their fathers, 34.0% by their mothers, 38.1% by a sibling, 72.2% by some other family member, 87.5% by a friend, and 46.4% by a role model. Almost half of all former smokers (44.6%) and never smokers (47.6%) shared their residences with one or more smokers. These nonsmokers were exposed to an average of 1.5 smokers per household.

Analysis of 396 cigarette brand selections produced popularity estimates paralleling the industry-reported brand shares of 1989 (*8*). Marlboro (regular and lights combined) accounted for 48.6% of the selections vs. 51.5% of the market share; Nacional accounted for 18.7% vs. 19.6%; and Montecarlo accounted for 15.4% vs. 19.1%. Marlboro accounted for 64.6% of the selections by young people (the 15–20 year group) but only 43.0% of those by adults ($T = 3.4$, $p < 0.01$). Montecarlo, in contrast, accounted for 9.6% of the selections by young people and 17.3% of those by adults. In the smaller sample of Montecarlo selections, however, this distinction was just below the level of accepted statistical significance ($T = 1.9$, $p = 0.056$).

Use of Other Substances

As a dichotomous variable, consumption of alcoholic beverages was related to both smoking and gender. The prevalence of drinking among current smokers in the study sample (71.8%) was significantly higher than the prevalences found among never smokers (44.5%, $T = 6.0$, $p < 0.01$) and former smokers (52.3%, $T = 2.8$, $p = 0.01$). Drinking was also reported much less commonly by women (44.5%) than men (74.3%, $T = 7.1$, $p < 0.01$). Comparison of smoking rates among drinkers and nondrinkers who smoked showed that the drinkers smoked an average of 3 cigarettes more per day. This difference became statistically significant

only when data for all the current and former smokers interviewed were combined ($n = 265$, $T = 2.0$, $p = 0.048$).

Most (80.2%) of the weighted sample drank coffee, and 1.6% smoked cigars. None of the subjects interviewed admitted chewing tobacco. Of the female interview subjects who currently smoked, 12.6% were also taking oral contraceptives. Asked how often they smoked because of hunger, nearly a quarter of the smokers (23.6%) opted for the answers "sometimes" or "often."

Cough and Shortness of Breath

High rates of morning cough (30.8%) and shortness of breath (55.1%) were reported by our nonsmoking interview subjects in these crowded urban neighborhoods. Nevertheless, statistically significant increases in both symptoms were noted when nonsmokers and current smokers were compared; specifically, 52% of the latter experienced morning cough ($T = 5.3$, $p < 0.01$), and 65.7% of the latter reported shortness of breath ($T = 2.2$, $p = 0.03$).

Perceptions of Smoking and Health

Perceptions of the practice of smoking were overwhelmingly negative: 93.2% of all the respondents characterized smoking as a "nasty habit," and 94.8% thought it set a poor example. Asked about the general effects of smoking, 97.2% recognized it as dangerous, 96.5% as life-shortening, and 75.6% as addictive. Of the nonsmokers, 87.7% said they felt irritation when exposed to secondhand smoke, and most (about 90%) of the smokers said they were aware of such feelings.

Disapproval of adult smoking was uniformly high, regardless of the smokers' sex or pregnancy. That is, nearly all the respondents disapproved of smoking by adult men (97.2%), by adult women (93.4%), and by pregnant women (98.9%). Seventy-eight percent also disapproved of smoking by minors, but that figure fell to 63.9% among respondents who were minors themselves (the 15–20 year group). The weighted data also indicate that fewer than two-thirds of the sample of adolescents (64.0%) felt that their fathers disapproved of the practice; adolescent perceptions of maternal views were much the same (65.9%). It is unclear why fewer respondents disapproved of youthful as compared to adult smoking, but the difference appears noteworthy.

More than half the adolescents (53.7%) saw cigarette use as "in" among their circle of friends. It is also noteworthy that a larger share of the adolescent sample saw smoking as a mark of maturity (82.3%) than saw it as indicating either masculinity (43.3%) or professional success on the part of men (34.0%) or women (16.7%).

Asked which particular serious diseases were linked to smoking, respondents tended to agree with all suggestions, correct or otherwise. Over 90% of the weighted sample affirmed that cigarettes can lead to lung cancer and fetal injury. On the other hand, only 79.2% affirmed the link with heart disease, while very nearly that percentage (77.6%) felt skin cancer was associated with smoking, and only 38.3% correctly rejected an association between cigarettes and arthritis. Open-ended answers concerning smoking-related diseases were elicited from about a quarter of the respondents (26.8%). Most of these referred to symptomatic conditions arising in areas of the body directly exposed to smoke. Asthma was mentioned most often (by 6.3%), followed by coughs, colds, tuberculosis, ulcers, caries, lack of appetite or weight loss, "nerves," and "any disease." Hypertension was mentioned by only three respondents, lip cancer by two, and premature birth by one.

Giving Up Smoking

Nearly all (87.0%) of the 200 current smokers interviewed said they wanted to quit, and 135 (67.5%) reported making at least one serious attempt to do so. Most of those who had failed (94.8%) said they still hoped to succeed (128/135 = 94.8%). Only 7 said they had become discouraged, evidently after unsuccessful attempts. However, fewer than half (48.0%) thought they would succeed in quitting within 5 years. Over one-third (36.3%) were unsure on this point. Smokers over 39 were less likely to foresee quitting within 5 years than were younger smokers (53.6% vs. 39.0%, $T = 2.1$, $p = 0.04$). Likewise, heavy smokers (those consuming over 10 cigarettes per day) were less likely than lighter smokers to foresee quitting in this time frame (32.5% vs. 58.8%, $T = 3.8$, $p < 0.01$).

Health concerns emerged as the single most important factor in motivating successful cessation. Allowed selections from multiple categories, varying proportions of the 65 former smokers interviewed made the following selections: "physician's advice" (16.9%), "influence of family" (13.8%), "feeling ill when smoking" (13.8%), "colds" (9.2%), "influence of friends" (6.1%), "reduced capacity for sports" (3.1%), and "expense" (3.1%). Open-ended responses by former smokers regarding their motivation to quit pointed to a wide variety of symptoms or illnesses experienced directly (cited by 24.6%); fear of various diseases (cited by 16.9%); and pregnancy (cited by 12.3% of the females). A desire to exercise will power, religion, and a desire for freedom from addiction were secondary sources of motivation cited by 13.8%, 4.6%, and 1.5%, respectively.

Offered multiple choices to describe how they quit smoking, most former smokers (76.9%) chose "abrupt cessation" rather than "tapering off" (21.6%), "switching to low-tar varieties" (1.5%), "quitting with a friend" (1.5%), or "following written instructions" (none). Regarding other methods used, 4.6% cited use of chewing gum, mints, or various physical surrogates.

DISCUSSION

Over the course of at least one generation, cigarette consumption in the Dominican Republic appears to have outpaced population growth. While the estimated population was increasing 2.3 times between 1962 and 1988 (*9*), cigarette consumption rose 3.7 times.[6] Most of this increase can be traced to activities of the U.S.-based tobacco giant, Philip Morris (Figure 1).

Taylor (*4*) provides an eye-opening account of how that company used its considerable financial clout to influence Dominican tax law in order to gain market advantages over local brands—Montecarlo, Cremas, Costanza, and Casino. All the latter are products of the state-owned Compañia Anonima Tabacalera (CAT), and all have watched their market share slowly shrink. Since 1976, most of the growth of cigarette sales in the Dominican Republic has been enjoyed by Marlboro and Nacional, two brands manufactured locally by Leon Jiménez, a subsidiary of Philip Morris (*8*).

The present study of brand choices affirmed Marlboro's popularity among youth. Indeed, it seems clear that the growth of Marlboro sales has not depended on mere brand-switching by established smokers, but rather upon recruitment of young people to tobacco addiction. The market shifts involved are simply too profound and sustained to permit any other explanation. By the mid-

[6]Burr P, Foreign Agricultural Service, U.S. Department of Agriculture, 1990. (Unpublished data.)

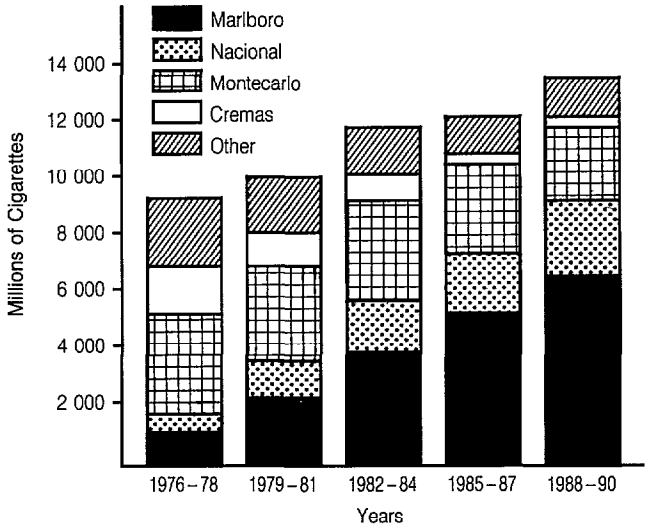


Figure 1. Trends in cigarette consumption and market shares of cigarette brands in the Dominican Republic, 1976–1990, based on data provided by Maxwell (*8*).

1980s, Ferraros et al. (*10*) found that 30% of 5 318 secondary schoolchildren in Santo Domingo were daily smokers, and a few years later Pimentel et al. reported data indicating that an astonishing 75.2% of students at a local medical and dental school were smokers (*11*). Out of 710 Santo Domingo secondary schoolteachers surveyed in the mid-1980s, 42% were found to be smokers (*12*).

The vast majority of adolescents surveyed in the present study at least nominally recognized the danger of smoking. Nevertheless, more than one-third accepted the practice among their peers, and over half saw cigarettes as "in" among their own circle of friends. Moreover, most young people accepted smoking as a mark of maturity. Most were also exposed to smoking behavior by others in their families and to secondhand smoke in their homes. Sale of cigarettes to Dominican minors is completely unrestricted in practice.

In the Dominican Republic, as in most other developing countries, the population tends to be relatively young, placing a higher proportion of residents at risk of initiating smoking. Eighty-three percent of currently smoking Dominicans in our sample were found to have begun by age 20. That under-20 group currently accounts for nearly half (48.6%) of the Dominican population (*13*).

The median prevalence of cigarette smoking in Latin America has been estimated at 37% for men and 20% for women (*2*). Specific estimates vary considerably, being generally higher in more developed nations, within urban areas, and among men. Although the Dominicans interviewed in our survey almost uniformly disapproved of smoking among women, their response seemed to be motivated largely by health concerns rather than social stigma. Remarkably for Latin America, the rate of smoking among Dominican women was roughly equal to that of Dominican men; and although women typically began smoking a few years later, their daily frequency of smoking was nearly the same as that of men. As early

as the mid-1980s, 25.1% of 2 765 Santo Domingo secondary schoolgirls 14 to 23 years old were found to be smokers.[7]

In the present study, 12.6% of the women currently smoking were also taking oral contraceptives, greatly increasing their risk of heart disease and stroke (*14*). In addition, nearly two-thirds of the pregnancies among the women who were current smokers had been compromised by the mother's smoking. (It appears noteworthy that alcohol consumption, which is also detrimental to the fetus, was considerably more prevalent among men and women who were smokers than among those who were nonsmokers.)

These findings have especially grave implications for maternal and child health. Maternal smoking during pregnancy has been linked to premature birth, low birth weight, increased perinatal mortality, and unusually high rates of developmental problems (*14*). As in the case of adolescent smoking, the Dominican Republic is at particular risk here; the nation's total fertility rate is still high (3.8), and perinatal diseases are reported to be the second leading cause of death (*15*).

Women seem particularly likely to smoke under the double emotional burden of poverty and family responsibilities (*16*)—which may help to explain why over half the housewives in the present study were cigarette smokers. In Santo Domingo, underemployment in barrios like those surveyed may exceed 50%, and women head roughly a quarter of the households. Even where there is a male breadwinner, the woman of the house often provides more financial support than does her spouse. Selling candy and cigarettes as a sidewalk "palitera" is a common source of meager income supplementation (*17*).

On the other hand, Philip Morris has enjoyed great financial success in the Dominican Republic, a fact not lost on its U.S. competitors. In mid-1992 L&M made its debut in Santo Domingo. A product of the Liggett group, that brand sells poorly in the U.S. but is now manufactured for Dominicans by Leon Jiménez. Almost simultaneously, the Dominican Corporation of State Enterprises approved plans for CAT to manufacture Winstons as a subsidiary of R.J. Reynolds. Options for manufacturing Camels and Salem were also granted (*18*). Thanks largely to Philip Morris, the Dominican Republic has become a hot new market for cigarettes, one in which large transnational tobacco companies are rapidly becoming the only viable players.

In a complex way, the various components of national development set the stage for cigarette demand—rising education levels, urbanization, the prominence of a working middle class, and the absence of government commitment to tobacco control (*2*). Each of these can be seen in the Dominican Republic (*17*). However, demand is actually created largely by advertising (*19*). Philip Morris products are incessantly promoted in the Dominican Republic through sophisticated multimedia campaigns featuring North American-looking role models. The Marlboro Cowboy overtly appeals to the Latin sense of virility. Seen as a *caballero*, the horseman commands the image of the Spanish gentry, suggesting wealth and refinement.

Girls and young women are also targeted. In television ads, a male photographer toasts the success of a desirable cover girl with champagne, and both celebrate with deep puffs from their Nacional cigarettes. Santo Domingo residents may be especially vulnerable to such messages, since many have family ties in

[7]Núñez Segura VM, Nova Soriano MA. *Etiología de la tos crónica en estudiantes de la ciudad de Santo Domingo: estudio epidemiológico y metodología de la encuesta.* Universidad Autónome de Santo Domingo, 1986. (Thesis for the degree of doctor of medicine, 3436).

the U.S. and for many the country is a source of hope. As sold in Santo Domingo, packages of L&M are labeled almost entirely in English and boast of "quality American tobacco"; the maker's "other route" advertising slogan links smoking to images that suggest travel to U.S. cities.

Encouraging exploitative, unregulated advertising is the fact that until recently the Dominican Republic was the most populous nation of the Western Hemisphere that required no health warning labels on cigarette packages or ads (*20*). After a well-publicized hunger strike by José Rafael Sosa, a local anti-smoking activist, nominal warnings appeared on Marlboro and Nacional cigarette packages: "THE SECRETARY OF STATE OF PUBLIC HEALTH WARNS: SMOKING MAY BE PREJUDICIAL TO YOUR HEALTH." Such formal, conditional wording seems unlikely to have any major impact on Dominican smokers, and small warning labels on the popular half-size package of 10 cigarettes may escape notice entirely. The sale of loose cigarettes likewise reduces exposure to such warnings. (Mr. Sosa has shown the senior author photographic proof that the stronger, rotated health warning required in the U.S. was covered over on at least one Marlboro advertising poster before it was displayed in Santo Domingo.)

Cigarette tar and nicotine content is not disclosed to the Dominican public—presumably because until health concerns emerge as a market force, transnational corporations are reluctant to implicitly raise the issue of safety (*3*). U.S. law requires periodic testing and publication of contents for most brands on its domestic market (*21*), but no such requirement exists for look-alikes made by foreign subsidiaries of U.S. companies.

The Dominican Committee on Smoking and Health, founded in 1989, has just begun its task of providing badly needed education on smoking. Through personal experience, many Dominicans already realize that smoking irritates directly exposed tissues and can predispose one to respiratory disorders such as asthma. There is clearly a belief that continued smoking leads to more serious consequences. Furthermore, this risk perception seems to be a personalized one for many adults because, in various forms, health concerns were the motivation most often voiced by former smokers.

Nevertheless, the specific nature of the health threat seems unclear to most Dominicans. Asked which serious diseases were linked to cigarettes, respondents tended to agree with all suggestions. Undoubtedly, many were only striving for "correct" responses. In sum, it appears that without basic education on smoking, few Dominicans can have any idea of the magnitude of the risk or of countermeasures able to mitigate that risk. Physicians, who can be an important source of such education, are authority figures to whom Latin Americans seem especially responsive. However, out of 580 Dominican physicians recently surveyed within the public health service, 34.5% were found to be smokers themselves (*22*).

Little information is available on the relationship between smoking and hunger in Latin America. In the present survey, nearly one-quarter of the smoking respondents found themselves motivated to light up, at least sometimes, because of hunger. Conversely, some said they quit smoking in order to gain weight or restore lost appetites. Between 1986 and 1991, cigarette consumption continued to climb during a time of soaring food prices, with annual consumer expenditures for cigarettes rising from RD$ 241 million to RD$ 835 million (*23*). Spent on food, the latter sum would have provided an estimated 61.6 billion calo-

ries and 4.2 billion grams of protein.[8] The emotional stress precipitated by recent economic deterioration is itself seen locally as a major cause of increased smoking (23). All in all, while cigarettes are often promoted as symbolizing success, in the rapidly growing cities of the developing world they may actually represent an adaptation to poverty.

While being one of the most critical corporate voices against medical evidence on smoking, Philip Morris once identified itself as a model of "good corporate citizenship," at work "in our home towns around the world" (4). Leaders of the firm should thus be interested in learning that the Dominican Republic is ill-prepared for the wave of tobacco-produced disease already breaking there (2, 24). Only two oncology hospitals exist to serve over 7 million people, and chemotherapy is prohibitively expensive. A single facility offers coronary bypass surgery within reach of the average person, but success rates are low and most patients must wait months they may not have. There is little prospect for improvements in health care for the rest of this century (17). Dominicans have come not to a "world of flavor," but to one of needless suffering and death.

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[8]This estimate is based on a typical meal of 50% white rice, 30% beans, and 20% chicken by weight providing 73.78 calories and 5.08 grams of protein per peso.

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Reference Books for Small Hospitals

In accordance with the request of a study group looking at the functions of first-level hospitals, WHO has prepared a "basic library" for doctors who work in these small hospitals. It consists of seven clinical manuals: (1) *Anaesthesia at the District Hospital,* (2) *General Surgery at the District Hospital,* (3) *Surgery at the District Hospital: Obstetrics, Gynaecology, Orthopaedics, and Traumatology,* (4) *Management of Severe and Complicated Malaria,* (5) *Respiratory Infections in Children: Management in Small Hospitals,* (6) *Manual of Radiographic Interpretation for General Practitioners,* and (7) *Cancer Pain Relief.*

To make these references accessible, WHO has reduced the price by 65%, to Sw.fr. 44.- for the set. The publications are available in Spanish, French, and English and can be obtained from: World Health Organization, Distribution and Sales, 20 Avenue Appia, 1211 Geneva 27, Switzerland; fax (41-22) 791-2300.