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Smoking cessation medications and cigarettes in Guatemala pharmacies

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ABSTRACT

Background Guatemala, a party to the Framework Convention on Tobacco Control (FCTC), is obliged to promote the wider availability of smoking cessation treatment and to restrict tobacco advertising. Pharmacies are fundamental in providing smoking cessation medications but also might increase the availability of cigarettes.

Purpose To assess availability of cessation medications and cigarettes and their corresponding advertising in Guatemala pharmacies.

Methods In Guatemala City a representative sample was selected from a list of registered pharmacies classified by type (non-profit, chain, independent). In addition, all pharmacies in the neighbouring town of Antigua were included for comparison. Trained surveyors used a checklist to characterise each pharmacy with respect to availability and advertising of cessation medications and cigarettes.

Results A total of 505 pharmacies were evaluated. Cessation medications were available in 115 (22.8%), while cigarettes were available in 29 (5.7%) pharmacies. When available, medications were advertised in 1.7% (2) and cigarettes in 72.4% (21) of pharmacies. Chain pharmacies were significantly more likely to sell cessation medications and cigarettes, and to advertise cigarettes than were non-profit and independent pharmacies.

Conclusion Most pharmacies in Guatemala do not stock cessation medications or cigarettes. Cigarette advertising was more prevalent than advertising for cessation medications. FCTC provisions have not been implemented in Guatemala pharmacies.

INTRODUCTION

As the tobacco epidemic continues to shift from developed to developing nations, tobacco control efforts become increasingly necessary in countries such as Guatemala. Although this country (14.7 million inhabitants[1]) has no national smoking survey, smoking has been estimated to be 18% among medical personnel[2] and 23% among the adult rural population (29% males and 0.7% females[3]). Furthermore, taxes on cigarettes remain low compared to the World Health Organization (WHO) recommendations[4] (a 46% tax was declared unconstitutional in December 2010 and currently there are two new laws being discussed in Congress[5]). Despite this scenario, the WHO Framework Convention on Tobacco Control (FCTC) was ratified in November 2005.[6] Article 14 of the FCTC obliges each party to 'facilitate accessibility and affordability for treatment of tobacco dependence including pharmaceutical products'.[7] However, as of May 2011 there is no government programme to facilitate access to smoking cessation medications, and pharmacies are the only source for smokers to obtain these medications.

In the USA most pharmacies stock cessation medications, with availability varying by pharmacy type and neighbourhood socioeconomic status. Results of studies published in the past decade show that 78% of pharmacies in San Francisco,[8] 91% in New York City[9] and 95% in Indiana[10] stock smoking cessation medications. Nicotine replacement therapy products are more likely to be available in chain pharmacies[8] and in those located in high socioeconomic status neighbourhoods.[9] The only available data from developing countries come from Thailand where 74% of pharmacists report having cessation medications available in their pharmacy.[11]

The cost of smoking cessation medications varies by country and is an important factor in determining accessibility. In New York City, the 2009 median price of the least expensive nicotine patch package available (7 or 14 patches) was US$32, and the price was higher (about US$4 more) in pharmacies in low socioeconomic status neighbourhoods.[9] In four countries of Latin America (Brazil, Uruguay, Argentina and Colombia), a 3-day supply of nicotine gum costs between US$10 and US$16 and a 2-week supply of varenicline costs between US$57 and US$60.[12] Bupropion SR is partially subsidised as an antidepressant in some Latin American countries. For example, a 30-tablet package costs consumers US$13 in Uruguay and US $18 in Argentina.[12] In Guatemala cost is particularly relevant given that 51% of the population live below the poverty line.[13]

Even though pharmacies are generally viewed as health promotion venues, many still facilitate cigarette access as purveyors of tobacco products. In 2003, the International Pharmaceutical Federation issued a recommendation against tobacco sales in pharmacies,[14] and availability has decreased over time in some cities and states (eg, San Francisco, from 89% in 1976[15] to 61% in 2003[8]; Indiana, from 64% in 1996 to 58% in 2001[10]). However, the percentage of pharmacies that sell cigarettes is still considerable (eg, 47% in New York City[9]). In addition, cigarette advertising has been found in 84% of those pharmacies that sell cigarettes.[8] In Thailand in 2007 an estimated 5.3% of pharmacists reported selling tobacco products in their pharmacy.[16] No other data are available from developing countries. Availability of tobacco products also varies by pharmacy type, with chain pharmacies, variety/department stores (eg, Walmart) and those located within a grocery store being more likely to

sell tobacco products.[8 9 17] The decrease in cigarette sales evidenced in recent years has occurred only in independently owned pharmacies and not in chain pharmacies.[8 10] If trends in the USA continue with the overall number of independent pharmacies decreasing and the number of chain, variety/department stores and grocery store pharmacies increasing, eventually nearly all pharmacies will be purveyors of tobacco products.

In Guatemala, pharmacies generally limit their sales to medications and hygiene/health-related products (eg, deodorant, dietary supplements, baby formula). To date, availability and affordability of cessation medications have not been quantified. Furthermore, the extent to which pharmacies sell and advertise tobacco products is unknown. Therefore, in order to estimate the extent to which community-based pharmacies are facilitating implementation of Article 14 of the FCTC, this study assessed cessation medication availability and price and characterised cigarette availability and advertising in Guatemala pharmacies. This will be the first evaluation of this type in a country that has ratified the FCTC. The USA has not ratified, and Thailand has ratified, but pharmacies self-reported cessation medication and cigarette availability.

METHODS

Pharmacies located in Guatemala City (the country's capital and largest city) and the nearby town of Antigua (30 miles away) were included in the study. In Guatemala City, a list of registered pharmacies, including pharmacy name and address, was obtained from the Ministry of Health and classified as chain, independently owned or non-profit. If three or more pharmacies had the same name, they were considered a chain. Chain and independently owned pharmacies were randomly selected (n=300 of each), and all non-profit pharmacies (n=257) were included. Pharmacies were not evaluated if they were closed, located in a dangerous neighbourhood or outside of the city, or if surveyors had no access to it or could not find the address provided. Whenever a pharmacy was not available, the nearest pharmacy within a one-block radius was surveyed as a replacement. If no pharmacy was found in this radius, it was classified as missing. In Antigua, owing to its small size (population 40 000 compared to one million inhabitants in Guatemala City[18]), we surveyed all pharmacies. Pharmacies were visited between April and July 2010, during regular business hours.

A checklist previously implemented in San Francisco was translated into Spanish and adapted with permission.[8] The checklist was completed by observation, and information was solicited from the pharmacy clerk (person behind the pharmacy counter, not necessarily a licensed pharmacist) as needed to complete the checklist accurately. To confirm pharmacy classification, the clerk was asked if the pharmacy was part of a chain or non-profit organisation; if neither, it was classified as independently owned. When there was disagreement between what the clerk reported and the checklist, the clerk's definition prevailed. Other characteristics recorded include whether the pharmacy was associated with a variety/department store or a medical facility. Availability of FDA-approved first-line medications for smoking cessation, cigarettes, other tobacco products, electronic cigarettes and cigarette filters was determined (in Guatemala, FDA recommendations are generally accepted owing to lack of local recommendations). In addition, the price of the least expensive smoking cessation medication available was recorded. Product placement was observed, as was the presence and characteristics of advertising for cessation medications and tobacco. For the medications, we also recorded the presence of informational brochures.

Data were analysed using Stata (Stata/IC 11.0). Percentages and medians (IQR) were used to summarise the data, and χ^2 statistics were computed to test for differences. The study protocol was reviewed and approved by Zugueme ethics committee in Guatemala.

RESULTS

In Guatemala City, of the 857 pharmacies selected from the list, after excluding those in dangerous neighbourhoods (58) or outside of Guatemala City (17), 782 (91.2%) were visited. Of those visited (figure 1), 463 (59.2%) were surveyed and 319 (40.8%) were not, mainly for being permanently closed or being registered more than once (two or more pharmacies in a single address in the Ministry of Health's list). An additional 42 pharmacies from Antigua were surveyed, yielding a total sample of 505 pharmacies. There was no significant difference in pharmacy type between cities (table 1).

Smoking cessation medications were available in 22.8% of pharmacies (table 2). Chain pharmacies and Antigua pharmacies were significantly more likely to sell the medications compared to independent and Guatemala City pharmacies. Non-profit pharmacies universally did not stock cessation medications.

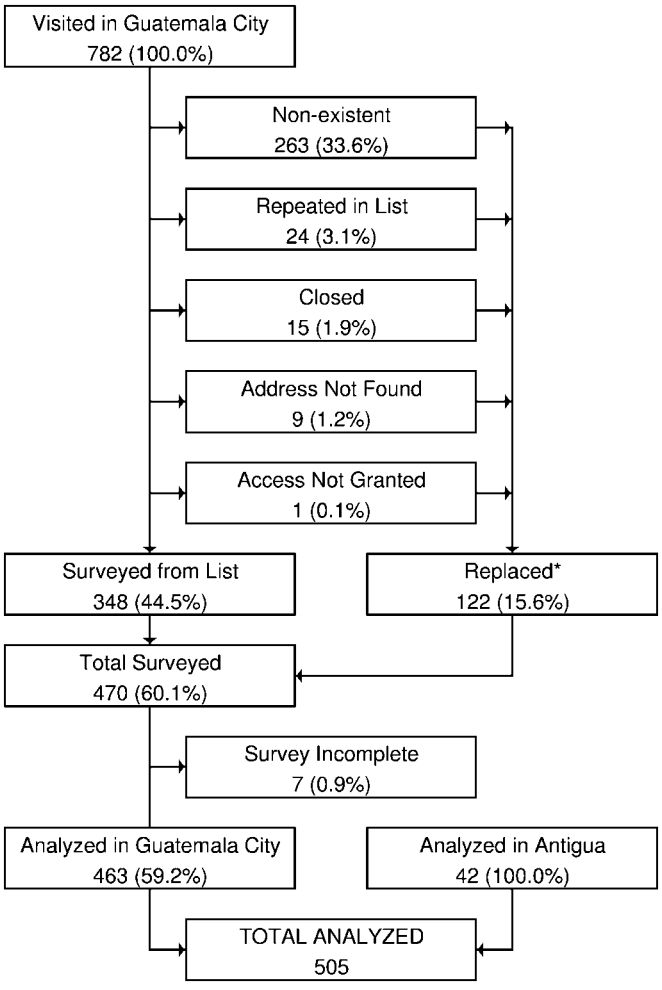

Figure 1 Flow diagram of surveyed pharmacies. *Unavailable pharmacies that were replaced by nearby pharmacies; not included in the five 'unavailable' categories (non-existent, repeated in list, closed, address not found, access not granted).

Table 1 Pharmacy type

	Guatemala City (n=463)	Antigua (n=42)	p
Non-profit (n, %)	98 (21.2)	5 (11.9)	0.2
Chain	160 (34.6)	13 (31.0)	
Independent	205 (44.3)	24 (57.1)	

Being part of a variety/department store was significantly associated with availability of cessation medications.

The nicotine patch, nicotine gum, varenicline and bupropion SR were the only smoking cessation medications that were available. In Guatemala, only bupropion SR requires a prescription. The median price of the least expensive medication available was US$15.27 (IQR, US$12.25–US$20.00; table 3). Advertising for smoking cessation medications was observed in two pharmacies (1.7% of those that sell cessation medications), and informational brochures were available in five pharmacies (4.3% of those that sell cessation medications). All available brochures were printed by a pharmaceutical company.

Cigarettes were sold in 5.7% of pharmacies (table 2). Availability was significantly higher in chain (11.6%) compared to independent (3.9%) and non-profit pharmacies (0.0%). Being affiliated with a variety/department store was significantly associated with selling cigarettes. Besides cigarettes, no other tobacco products were found. Cigarette filters and electronic cigarettes were available in 3.8% and 0.8% of pharmacies, respectively.

Cigarette advertising was found in 21 pharmacies (72.4% of those that sell cigarettes) and was significantly more frequent in chain pharmacies than in non-profit or independent pharmacies. When observed, it was always as a part of the cigarette display. Four cigarette brands were advertised: Philip Morris Marlboro (in 55.2% of pharmacies that sell cigarettes) and Rubios (10.3%), and British American Tobacco's After Hours (27.6%) and Pall Mall (6.9%).

Regarding product placement, cessation medications were less frequently visible to the client than were cigarettes (42.6% and 86.2% of pharmacies that sell medications and cigarettes, respectively). Most cessation medications were located behind the pharmacy clerk's counter (74.3%) and the rest were located outside of the immediate pharmacy area. Cigarettes were mostly located in the pharmacy area (44.8%) or behind a non-pharmacy counter (48.3%) (the rest were located in a free-access area). Whenever both cessation medications and cigarettes were available, they were always located at more than 1 m from each other and usually (60.9%) at more than 2 m.

Table 2 Availability of smoking cessation medications and cigarettes by pharmacy type and city

	Cessation medications		Cigarettes	
	No (%)	p	No (%)	p
Total (n=505)	115 (22.8)		29 (5.7)	
Type				
Chain (n=173)	81 (46.8)	<0.001	20 (11.6)	0.003
Independent (n=229)	34 (14.9)		9 (3.9)	
Non-profit (n=103)	0 (0.0)		0 (0.0)	
City				
Guatemala City (n=463)	97 (21.0)	0.001	27 (5.8)	0.8
Antigua (n=42)	18 (42.9)		2 (4.8)	

DISCUSSION

To our knowledge this is the first study outside of North America to document (a) availability of smoking cessation medications and tobacco products, and (b) advertising for cessation medications and tobacco products directly from community-based pharmacies. Cessation medications were found in less than one fourth of the surveyed pharmacies and are expensive for the local population. In brief, they are hard to find and hard to buy. On the other hand, cigarettes are sold in few pharmacies but are frequently advertised.

Efforts by the pharmaceutical companies to market cessation medications in Guatemala are low. Besides being scarce and expensive, these are rarely advertised or even visible to the client, requiring the would-be quitter to ask the pharmacy clerk for availability. In addition, several nicotine replacement therapy formulations (lozenge, nasal spray and inhaler) are not available at all, thereby limiting the therapeutic options for potential quitters. In order to make medications more readily available, the Guatemalan government and pharmaceutical industry might consider selling over-the-counter cessation medications at grocery stores and supermarkets. However, this strategy would also require training personnel at these venues on how to provide cessation counselling.

The observed cost of cessation medications is similar to that reported in other Latin American countries.[12] However, these costs are high in comparison to the socioeconomic status of Guatemala citizens, in that the median of the least expensive medication was equivalent to 2 days of minimum wage. Also, when compared to cigarettes, the cost of medications is excessive. The daily cost of using the nicotine patch (the medication with a lowest price per day) is approximately 50% higher than that of smoking one pack of cigarettes per day (median US$2.36, IQR US$2.06–US$2.95 and US$1.70, US$1.63–US$1.77,[19] respectively). In the USA, owing to taxation (national average US$1.34 per pack[21]), the daily cost of cessation medications is similar to a pack of cigarettes.[20]

From a developing country perspective, investing in methods for making cessation medications more economically accessible might not be the most cost-effective approach for tobacco control, as suggested by Chapman and consistent with this

Table 3 Smoking cessation medications availability and cost (US$)

	Availability (%) (n=115)	Median cost (IQR)	Daily median cost (IQR)*
Nicotine patch (seven patch package)	93 (80.9)	16.50 (14.44–20.63)	2.36 (2.06–2.95)
Nicotine gum (30 gum package)	91 (79.1)	13.00 (12.24–15.75)	4.33 (4.08–5.25)
Varenicline (1 mg×28)	63 (54.8)	69.26 (68.06–70.51)	4.95 (4.86–5.04)
Bupropion (150 mg×30)	13 (11.3)	59.00 (56.60–59.00)	3.93 (3.77–3.93)
Least expensive medication available		15.27 (12.25–20.00)	
20 cigarettes=one pack (US$)			1.70 (1.63–1.77)[19]

Minimum wage in Guatemala (US$): 7.00/day.
*Dosage of medications from Rx for Change: Clinician-Assisted Tobacco Cessation.[20]

study's results.[22] Given the costs we would not recommend a government-funded smoking cessation medication programme in Guatemala, as it would be more reasonable to focus the limited resources on more cost-effective population-based strategies. As of May 2011, the government has taken only one step in the right direction, a comprehensive smoke-free law.[23] Other population-based strategies that have been shown to increase quit attempts and success rates could be implemented (eg, a tobacco quitline, behavioural counselling, taxation). However, even though it is possible to quit smoking without use of pharmacotherapy, medications are effective and on average will double the rate of successful quit attempts.[24] In addition, by ratifying the FCTC the Guatemalan government has pledged to make them available. To bypass the economic hurdle posed by cessation medications at the moment, several strategies could be implemented. Increasing cigarette taxes, fines for violations of the indoor smoking ban, and the introduction of generic drugs are a few examples.

Although the primary focus of pharmacies should be health promotion, cigarettes were available in 5.7% of pharmacies visited; this is similar to Thai pharmacies (5.3%) but substantially lower than US pharmacies (47–61%[8–10]). Although fewer pharmacies sell cigarettes than cessation medications, the latter are only available in pharmacies while the former are available in a number of different retailers (eg, gas stations, convenience stores, supermarkets). Therefore, the data accurately portray cessation medication availability to the public, but not overall cigarette availability. Even though tobacco sales represent minor revenues for pharmacies,[25] different factors might be implicated in maintaining this practice. Cigarettes can attract customers who then purchase other items and the promotional funding provided by the tobacco industry can be substantial.[25] Selling cigarettes in pharmacies sends the false implicit message that smoking is safe,[26] providing a reason for the industry to perpetuate this practice through promotional funding. This was consistent with current findings as most pharmacies selling cigarettes also advertise them and stock them in a visible manner to the customer. Furthermore, smokers visit pharmacies to buy cessation medications, and exposing them to cigarettes and cigarette advertising could undermine their resolve to quit. It has been shown that point-of-sale advertising undermines quit attempts, increases cigarette cravings among former and current smokers and increases unplanned cigarette purchases.[27] According to Article 13 of the FCTC Guatemala must 'undertake a comprehensive ban of all tobacco advertising'.[7] However, this is far from being accomplished. In particular at the point of sale, including but not limited to pharmacies, advertising is still highly prevalent.[28]

Availability of cessation medications and cigarettes was associated with pharmacy type. The decision to sell cigarettes is probably made by corporate boards instead of pharmacy staff, and therefore more likely to be influenced by economic rather than health reasons. It is also important that chain pharmacies tend to be larger and are more likely to be part of a variety/department store that sells other items, including tobacco products. Non-profit pharmacies did not sell cessation medications or cigarettes. This might be because they sell mostly generic drugs (there are no generic cessation medications in Guatemala) and generally do not stock a large variety of drugs. Even though our study was not stratified by neighbourhood socioeconomic status, differences in cessation medications and cigarettes availability were adequately explained by store type.

Current findings should be considered in light of some limitations. In Guatemala City, the list provided by the Ministry of Health proved to be outdated, as a large number of listed pharmacies were out of business or non-existent. Furthermore, it cannot be guaranteed that all currently existing pharmacies were listed. Nevertheless, we surveyed 20% of pharmacies in the city (if the total number on the list was accurate), representing all 20 city districts. In an attempt to maintain this geographic representativeness, pharmacies that replaced unavailable pharmacies were chosen from within a one-block radius. Also, owing to the sampling process, non-profit pharmacies are over-represented and independently owned pharmacies are under-represented. It is therefore reasonable to assume that both cessation medications and cigarette availability are slightly underestimated, as non-profit pharmacies do not stock either. Even after considering these factors, the sample should be considered representative of pharmacies in Guatemala City. Our sample is not intended to be representative of the whole country, especially the rural area. Availability of cessation medications in rural area pharmacies would be lower as chain pharmacies are less common. The poverty level is higher in rural Guatemala, therefore cessation medications would be more difficult to find and to afford. This is not the case for cigarettes, because they are readily available (eg, stores, supermarkets, gas stations) and are affordable.

Only FDA-approved first-line medications for smoking cessation were assessed. Even though collecting data on second-line medications and alternative products was not within the scope of this study, these products might be considered in future studies. Furthermore, even though our study did not address product use, it is likely that given the low availability and high cost of cessation medications their use is low, especially because pharmacies are the only source of availability.

In conclusion, community-based pharmacies have a unique opportunity to contribute to effective support of the FCTC in Guatemala, but currently they are being underutilised. To comply with FCTC, the government should consider the design and implementation of a comprehensive smoking cessation programme that, among other things, increases the availability and affordability of cessation medications through pharmacies. However, new strategies would be needed to fund such a programme.

What this paper adds

- Pharmacies are the main source of smoking cessation medications. However, it has been documented that availability and costs might limit access to such medications. Furthermore, pharmacies have also been found to sell tobacco products. Guatemala, a party to the Framework Convention on Tobacco Control, is obliged to promote the wider availability of cessation treatment and to restrict tobacco advertising. The extent to which pharmacies stock and advertise cessation medications and cigarettes, and the retail price of medications had not been documented in Guatemala.
- This study showed that cessation medications are available in less than a quarter of Guatemala pharmacies and are rarely advertised. In addition, they are expensive and the daily cost is excessive when compared to smoking one pack of cigarettes a day. Cigarettes are sold in some pharmacies and frequently advertised.
- In conclusion, smoking cessation medications are difficult to find and expensive in Guatemalan. The government needs to implement a comprehensive cessation program in order to help smokers quit.

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