RESEARCH PAPER

The tobacco epidemic in Syria

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Background: The Syrian Center for Tobacco Studies (SCTS) was established in response to the smoking epidemic in Syria and lack of local knowledge and expertise to confront it.
Objectives: To (1) study tobacco use and local smoking practices using both qualitative and quantitative research methods; (2) develop and test an effective smoking cessation intervention for the Syrian environment; and (3) train Syrian researchers.
Methods and results: The Aleppo Household Survey involved a representative sample of adults in Aleppo (2038 subjects, 45.2% men, mean age 35.3 years, response rate 86%). The prevalence of cigarette smoking was 56.9% among men and 17.0% among women, while the prevalence of waterpipe smoking was 20.2% among men and 4.8% among women. Daily use predominated for cigarettes (29.0%), while the opposite was seen in waterpipe use with 10.6% smoking occasionally. Interest in quitting was greater for cigarette than waterpipe smokers (74.0% v 48.6%), while quit rates were higher for waterpipe compared to cigarettes (28.2% v 16.5%). In-depth ethnographic interviews with smokers show that smoking waterpipe is often viewed as an aesthetic enjoyable experience, while smoking cigarettes is viewed as a mundane anxiety-relieving addiction. Clinical laboratory studies reveal that both waterpipe and cigarette smokers in Syria are exposed to smoke toxicants and exhibit dependence symptoms.
Conclusions: All these data have been used iteratively to adapt smoking cessation interventions from developed countries to suit the local Syrian environment. Research conducted in the SCTS to date has provided a fertile training ground for Syrian researchers, as well as for the building of regional collaborations.

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S yria is an Arab Mediterranean country with a population of over 18 million inhabitants. Beginning in 2000, data on tobacco use in Syria began to emerge, based on convenience samples drawn from several subpopulations (for example, teachers, primary care patients, and physicians). These early studies highlighted the seriousness of tobacco use in Syria, indicating that about half of men, and between 10–15% of women, smoked cigarettes regularly.[1] At that time, however, Syria lacked several essential resources to combat a growing tobacco epidemic, including a comprehensive knowledge base of the extent of the problem and effective control strategies. Notably, Syria also lacked qualified local expertise devoted to the study and monitoring of the epidemic. Therefore, the idea of establishing a national centre to study tobacco use and train tobacco researchers represented a natural response to this situation.[2] Since its inception, the Syrian Center for Tobacco Studies (SCTS, www.scst-sy.org) has aimed to:

1. Study tobacco use and local smoking practices using both qualitative (for example, key informants interviews) and quantitative research methods (for example, epidemiological surveying, clinical behavioural pharmacology studies).

2. Develop and test culturally appropriate, efficacious, and cost-effective smoking cessation interventions based on data from epidemiological and clinical laboratory research, as well as other countries' experience.

3. Train Syrian tobacco researchers so that the resources necessary for monitoring the tobacco epidemic and informing national anti-tobacco policies are in place locally.

In this report we showcase what has been done to advance each of these aims. The focal point of this report is new data from the Aleppo Household Survey (AHS), which provides the first population-based characterisation of tobacco use patterns in Syria.

AIM 1: TOBACCO USE CHARACTERISTICS IN SYRIA
The anatomy of the smoking epidemic among adults in Syria

In 2004, SCTS conducted the first population-based survey to examine smoking patterns and characteristics of adults (18–65 years) in Aleppo (population of more than two million), Syria. The methods of the AHS have been reported in detail elsewhere.[3][4] Relevant to this report, based on the municipality enumeration of Aleppo, a two-stage, stratified, cluster sampling with probability proportional to size (PPS) was used for the selection of residential neighbourhoods. For each selected neighbourhood, a number of households, proportional to its size, was randomly selected with equal probability. In each selected household, random sampling was used for the selection of an adult representative (18–65 years). Surveys were administered by five teams of mixed gender interviewers (10 surveyors) using a computer-based interface for the recording of responses and measurements.

Overall, 2038 adults participated in the survey (45.2% male, mean age 35.3 years, response rate 86%). Participants were asked about past month use of cigarettes, waterpipe, and other forms of tobacco, with frequency reported as daily or occasionally. A current smoker (either cigarette or waterpipe) was defined as someone who reported daily or occasional use during the past month. A former cigarette smoker was defined as someone who reported daily cigarette smoking previously but not in the past month, and a former

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Abbreviations: AHS, Aleppo Household Survey; EMR, Eastern Mediterranean Region; NRT, nicotine replacement therapy; PPS, probability proportional to size; QSU, Tiffany-Drobes Questionnaire of Smoking Urges; RAM, Research Assistance Matching Project; SCTS, Syrian Center for Tobacco Studies; SES, socioeconomic status

waterpipe smoker was someone who previously used waterpipe at least occasionally but not in the past month. Quit rate was calculated as number of former smokers in the population divided by number of ever daily smokers for cigarette and ever smokers for the waterpipe ×100.[5] [6] Information also was collected about sociodemographic characteristics of the selected household member and household. Socioeconomic status (SES) for participants' households was assessed using a derived score (0–12) based on information about income, education, employment, item ownership, number of members with paid job, and household density as number of persons/room. For analyses, values were categorised as tertiles into low, middle, and high.[3] [4]

The sample was weighted to account for the complex sampling design according to the method previously described,[7] [8] and the weighted sample was used to calculate all prevalence estimates. The prevalence of cigarette smoking was 56.9% for men and 17.0% for women, while the prevalence of waterpipe smoking was 20.2% for men and 4.8% for women (fig 1). The prevalence of use of both waterpipe and cigarette was 7.4% (13.6% for men, 2.6% for women). In terms of the frequency of smoking, daily use predominated for cigarette smoking (29.0% smoked daily; 51.4% of men and 11.5% of women) whereas 5.5% smoked occasionally (5.5% for men, 5.5% for women). The opposite pattern was observed for waterpipe, with 1.0% smoking daily (1.4% for men and 0.6% for women), and 10.6% smoking occasionally (18.8% of men and 4.2% of women). The prevalence of combined daily use of cigarette and waterpipe was reported rarely—0.1% (0.1% men, 0.1% women).

Details of smoking and quitting patterns among adults in Syria according to smoking method, gender, age, and SES are given in figs 1 and 2 and table 1. Other forms of smoking (cigar, pipe) were infrequent and their use prevalence was 1.3%. Daily cigarette smokers averaged 20.8 (SD 14) cig/day (23.6 (13.9) for men and 12.8 (11) for women), while weekly waterpipe smokers smoked on average 1.7 (1.1) waterpipe/week (1.6 (1) for men and 1.7 (1.4) for women). Age of initiation differed according to method of smoking and gender. On average, men initiated use of cigarettes at age 17.9 (5.3) years and waterpipe at 25.5 (9.1) years, while women initiated use of cigarettes at 22.5 (8.4) years and waterpipe at 28.9 (9.9) years (p < 0.05 for all gender and smoking method comparisons by t test). Compared to waterpipe, more cigarette smokers were interested in quitting (48.6% v 74%, respectively), and made a quit attempt in the past year (22.8% v 58.1%, respectively) (p < 0.05 for all according to χ^2 test) (fig 3). Quit rates were 16.5% for cigarettes and 28.2% for waterpipe, and differed significantly according to age for cigarettes and SES for waterpipe, with the older being more likely to have quit cigarettes and less affluent more likely to have quit waterpipe (p < 0.05 for all according to χ^2 test) (table 1).
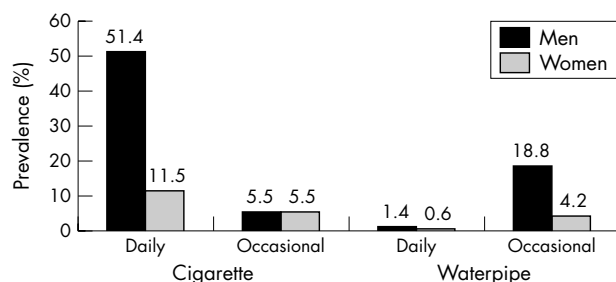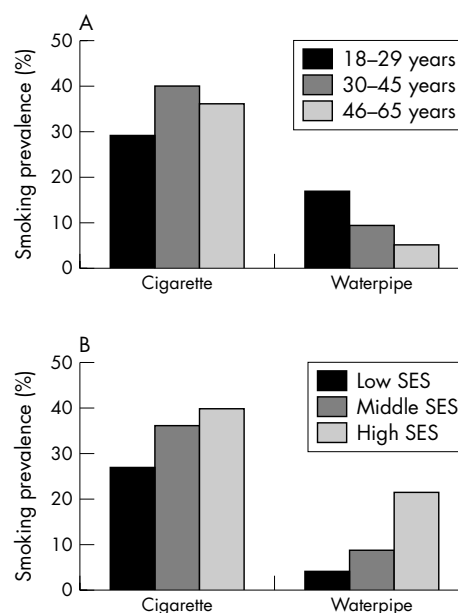

Figure 2 Prevalence of different tobacco use methods among adults (18–65 years) in Syria according to (A) age and (B) socioeconomic status (SES).

Figure 1 Patterns of smoking among adults (18–65 years) in Syria according to gender and method of smoking.

Table 1 Patterns of use and quitting of tobacco among adults (2038) in Syria

	Cigarette % (n)	Waterpipe % (n)
Smoking rate*		
Total		
Daily	29.0 (671)	1.0 (18)
Occasionally	5.5 (144)	10.6 (231)
Gender		
Men	56.9 (554)	20.2 (182)
Women	17.0 (261)**	4.8 (67)**
Age		
18–29	29.0 (235)	17.1 (115)
30–45	39.8 (414)	9.8 (105)
46–65	35.8 (166)**	5.7 (29)**
SES		
Low	26.7 (258)	4.0 (52)
Middle	36.0 (322)	8.9 (85)
High	39.8 (235)**	21.2 (112)**
Quit rate		
Total	16.5 (141)	28.2 (95)
Gender		
Men	15.5 (96)	28.9 (79)
Women	19.0 (45)	25.7 (16)
Age		
18–29	11.5 (27)	21.5 (31)
30–45	12.4 (59)	35.7 (43)
46–68	26.2 (55)**	35.5 (21)
SES		
Low	17.4 (41)	55.4 (31)
Middle	16.1 (62)	32.9 (37)
High	16.3 (38)	17.1 (27)**
Smoking features (mean (SD))		
Age of initiation (years)	19.4 (6.8)	26.4 (9.5)†
Duration of smoking (years)	17.0 (11.1)	6.8 (8.0)†
Consumption of daily users (items)	20.8 (14.0)	1.4 (0.8)†

*All prevalence rates were calculated from the weighted sample to account for the complex sampling design.
**p ≤ 0.05 according to χ^2 test for the comparison of prevalence across sociodemographic characteristics.
†p < 0.05 according to t test for the comparison of means across smoking method.

These data illustrate the gravity of the smoking epidemic in Syria. Daily cigarette smoking was the predominant form of smoking for both men and women, affecting 51.4% and 11.5%, respectively. We see distinct smoking patterns for cigarette and waterpipe among the general population, whereby only a minority smoke both tobacco products, and waterpipe use, compared to cigarettes, is less likely to occur daily, is initiated at a later age, and has clear age and SES associations with younger and more affluent Syrians most likely to engage in its use (fig 2). Quitting is also more prevalent among waterpipe smokers especially in the poorer sections of the society. Less interest in quitting and a higher quit rate among waterpipe users compared to cigarettes possibly indicate lower level of nicotine dependence among waterpipe users. These results about patterns of use and quitting of waterpipe confirmed earlier results from limited surveys done by SCTS and elsewhere in the Eastern Mediterranean Region (EMR).[9–14]

The alarming increase of this tobacco use method in Syria and EMR as well as its health-damaging potential have led us to examine features of dependence among waterpipe users. Comparing characteristics of waterpipe users (in cafés in Aleppo) with different use frequencies shows that in comparison to less frequent users, frequent and regular waterpipe users display many characteristics consistent with drug dependence, including continued use despite adverse social, health, and economic consequences, difficulty quitting, and increasing behavioural adaptations to support use.[15] While some of these dependence-related phenomena appear

to be similar for waterpipe and cigarettes, use patterns and characteristics differ considerably between the two tobacco use methods in ways that appear to influence the experience and measurement of dependence. The time and special equipment needed for preparation, the dominance of intermittent use patterns, the importance of social interaction at nearly all stages of use, and unique reinforcing stimuli such as the sight of waterpipe, its setting (often cafés dedicated to waterpipe smoking), and its aromatic smell all seem to influence dependence experiences and manifestation. Preliminary evidence suggests that an important step toward dependence involves a transition from social to individual patterns of waterpipe use.[15]

These defining features of waterpipe use have motivated us at SCTS to try to understand in greater detail this emerging tobacco use method and how its use differs from that of cigarettes. Individual semi-structured interviews were conducted with 32 adults (16 mainly waterpipe smokers and 16 mainly cigarette smokers). The interviews covered the topics of smoking initiation, recent experiences with smoking, past quitting experiences, relapse triggers, possible motivations for trying to quit again, and perceptions regarding what strategies and types of health care providers that might be helpful in quitting.[16] Data were analysed through content analysis using the grounded theory approach.[17] A central theme that emerged was that smoking waterpipe is often viewed as an aesthetic and sometimes even ecstatic experience that produces a sense of euphoria or close social interconnectedness, while smoking cigarettes is viewed as a mundane addiction that provides some relief from anxiety in exchange for a persistent, nagging sense of being "dominated". What is unique and worrisome about the waterpipe is its use as a substitute for cigarettes after quitting, and the fact that the waterpipe was the trigger of relapse for some cigarette quitters.[16] Thus, initiation of waterpipe use can be a significant unintended consequence of cigarette smoking cessation. These motivational and behavioural differences between waterpipe and cigarette users are relevant to guide cessation intervention development for Syrian smokers of both types.

It becomes evident from the above mentioned studies that in order to develop effective smoking cessation interventions for Syrian smokers, qualitative data must be complemented by quantitative assessment of smokers' exposure to tobacco toxicant and addictive substances, including both waterpipe and cigarettes.

Clinical laboratory studies

Clinical laboratory studies can inform smoking cessation intervention development by characterising important dependence features of tobacco use such as nicotine delivery, withdrawal symptoms, and tobacco-use suppression of withdrawal symptoms.[18] Two laboratory studies are underway currently at SCTS. The first aims to validate and adapt to the Syrian environment clinical laboratory methods that have been developed in advanced institutions, and the second aims to study nicotine delivery and acute effects of waterpipe use.

We have conducted preliminary analysis of data from 45 cigarette smokers assigned to one of three deprivation conditions (0, 3, 6 hours) to validate the Arabic versions of the Tiffany-Drobes Questionnaire of Smoking Urges (QSU) and Hughes-Hatsukami Withdrawal Questionnaire.[19 20] Analysis shows that cigarette smokers in Syria experience deprivation-induced symptoms that are similar to those reported in other populations[19 20] and that can be suppressed by smoking. For example, all scores on all items of the QSU increased along with deprivation interval. The item "I have an urge for a cigarette" showed the greatest difference (from
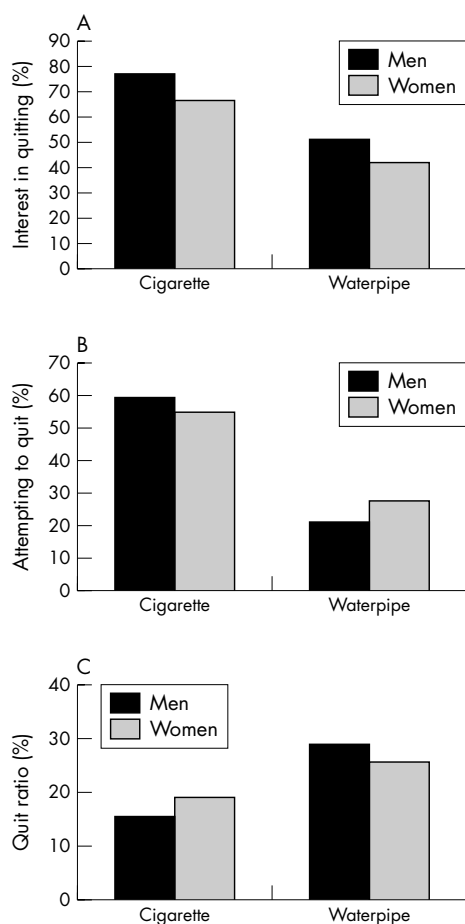

Figure 3 Quitting characteristics of different tobacco use methods among adults in Syria: (A) interest in quitting, (B) prevalence of past year attempting to quit, and (C) quit rate.

a mean score of 1.1 immediately after smoking to a mean score of 3.9 after six hours tobacco deprivation; scores range from 0–6), while item ''Smoking would make me less depressed'' shows the least difference (from a mean score of 1.5 after smoking to 2.3 after six hours tobacco deprivation) (p < 0.05 for both according to paired t test).[21] Not surprisingly, most items showed a significant decrease after smoking (that is, smoking-induced withdrawal suppression). This study shows that methods used in developed countries to assess tobacco withdrawal and withdrawal-suppression, critical for assessing dependence, are applicable to Syrian smokers.

In the second study, which is conducted in collaboration with the American University of Beirut, preliminary analyses of data collected from 11 subjects assessed at our laboratory in Aleppo reveals several acute effects of waterpipe use and deprivation. Participants were recruited from among individuals who reported using waterpipe (and not cigarettes) on most days of the week. Participants (mean age 31 years) completed a single ad libitum waterpipe use session (mean 45.9 min (SD 13.5)) after 24 hours carbon monoxide (CO)-verified abstinence (expired CO level < 7 ppm). Outcome measures included expired air CO and several measures of tobacco abstinence effects that have been adapted for waterpipe users and translated into Arabic (that is, modified versions of the QSU and Hughes-Hatsukami Withdrawal Questionnaire). Results suggest that waterpipe users are exposed to more CO than previously reported (we observed a mean increase from 5.6 ppm before use to 36.3 ppm after use (p < 0.01), compared to the mean of 14.2 ppm after waterpipe use reported by Shafagoj and Mohammed[22]). Ratings of several tobacco withdrawal symptoms were reduced significantly by waterpipe use, including restlessness, impatience, and craving (from the Hughes-Hatsukami Withdrawal Questionnaire), and several items from the modified QSU

Figure 4 Panel A shows mean data (n = 11) from three items of the modified version of the Hughes-Hatsukami Withdrawal Questionnaire, while panel B shows mean data from four items of the modified Tiffany-Drobes Questionnaire of Smoking Urges (QSU) before (Pre) and after (Post) a waterpipe use episode (mean duration 45.9 minutes) that followed 24 hours of carbon monoxide-verified tobacco abstinence (items in both scales were presented to participants in Arabic). The actual QSU items were: ''I have a desire for a waterpipe right now'', ''If it were possible, I probably would smoke now'', ''All I want right now is a waterpipe'', and ''I am going to smoke a waterpipe as soon as possible''. The Y axes show the total score for each item; filled symbols indicate a significant pre-post difference (p < 0.05).

including ''I have a desire for a waterpipe right now'', ''If it were possible, I probably would smoke now'', ''All I want right now is a waterpipe'', ''I have an urge for a waterpipe'', and ''I am going to smoke a waterpipe as soon as possible'' (fig 4) (unpublished data).

These results highlight the applicability of clinical laboratory methods to Syrian smokers and local smoking methods, and suggest that these users are exposed to high levels of some toxicants. The abstinence symptom suppression observed in these studies is consistent with tobacco use-related dependence associated with cigarettes and with waterpipe use. Both these studies are important to understanding the tobacco dependence induced by smoking methods and patterns common in the Syrian environment.

AIM 2: INTERVENTION DEVELOPMENT AND TESTING
In addition to the spread of smoking in Syria (fig 1), Syrian smokers are less successful at quitting than smokers in developed countries.[1] As noted above, only about 15% of smokers in Syria have quit, compared to approximately 50% in the USA, for example.[23] This lack of success can be attributable partly to a lack of support for cessation in Syria. Pharmacological agents such as bupropion (Zyban) or nicotine replacement therapy (NRT) are not sold in Syria, and behavioural counselling services do not exist.[24] Thus, developing smoking cessation interventions to assist those interested in quitting was identified as a research priority by the SCTS.

Our research continues on the development of culturally-appropriate cessation interventions for cigarette smokers based on comprehensive, systematic, multidisciplinary approaches.[24] This approach in Syria has involved the formation of a multidisciplinary team, consisting of medical anthropologists, psychologists, epidemiologists, behavioural pharmacologists, and physicians. Ethnographic (for example, key informant interviews) and epidemiological data collection have been used to assess tobacco use and cessation patterns, perceptions and attitudes, quit experiences, treatment needs, and existing resources. Clinical laboratory methods have also been used to understand nicotine exposure and dependence features of local smokers. All these methods have been used, in iterative fashion, to inform the development and testing of novel interventions.[24]

Because cessation interventions have never been tested or implemented in Syria, as a first step, we conducted a pilot randomised clinical trial to determine the feasibility and efficacy of a clinic-based intervention. Despite evidence that pharmacotherapy increases cessation rates,[25 26] bupropion and similar medications are currently unavailable in Syria. Therefore, we opted for our pilot trial to test two intensity levels of behavioural intervention, without pharmacotherapy, that could easily be implemented in existing health care services. We randomised 50 smokers to either a brief (single session) or intensive (four face-to-face sessions plus six phone follow-ups) hospital-based, free, behavioural counselling intervention. Across treatment conditions, mean age was 34.8 (11) years, 86% of enrollees were men, and 64% smoked more than 20 cigarettes/day.

At baseline, treatment conditions were comparable on all demographic and smoking history variables. Only 40% completed treatment in the intensive condition. We analysed characteristics of dropouts from the intensive intervention to assist in improving retention and format of the intervention. Dropouts were less educated (67% v 20%, respectively, not completing high school), and had smoked for fewer years (10 v 18 years). Dropouts also appear to be more dependent, as evidenced by a higher cigarette consumption (80% v 30% smoking > 20 cigarettes/day), higher Fagerstrom Test for
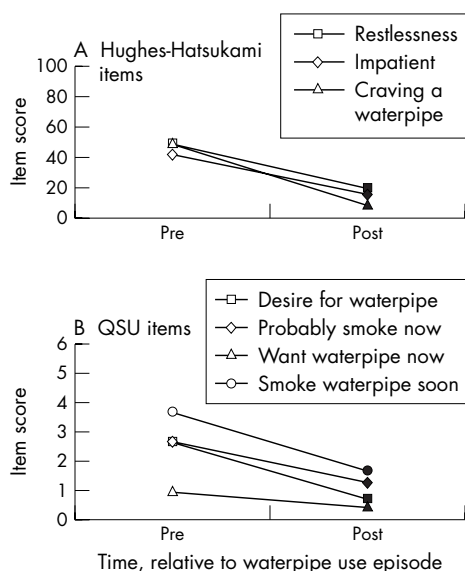
Nicotine Dependence score (5 (2.3) v 4 (2.9)), fewer previous quit attempts (80% v 100% quitting at least once), and lower likelihood of past success at quitting (47% v 20% having no successful attempts) (p < 0.05 for all).[27] These results indicate that nicotine dependence is an important barrier to retention in smoking cessation trials in Syria. Accordingly, increasing the availability of pharmacological therapy is likely to help in this effort.

Knowledge obtained from the studies outlined here, combined with the well documented superior efficacy of combined behavioural and pharmacological cessation interventions, particularly when delivered in health care settings,[28 29] were considered in planning a behavioural–pharmaceutical intervention for large scale testing in primary care centres in Aleppo, Syria. This recently initiated study will evaluate the feasibility and efficacy of implementing clinic-wide strategies to identify smokers and assist them in quitting (for example, identification of all patients' smoking status during intake assessment, providing training to all primary care physicians to deliver a brief cessation intervention to all smokers, and delivering intensive cessation intervention aided by NRT).

We intend to recruit 250 smokers, 18–65 years of age, who have been smoking continuously for at least one year and are smoking at least five cigarettes per day. They will be recruited from three randomly selected government-supported primary care centres and one private diabetes clinic. Before and following implementation of the smoking cessation intervention, a random sampling of patients from each participating clinic will be surveyed to determine smoking and quit rates and whether cessation intervention strategies were delivered to them. Physicians in those clinics will also be surveyed to assess their own smoking status and their reported delivery of smoking cessation interventions.

Following clinical practice guidelines[28] all physicians in the participating clinics will be trained to deliver a brief intervention with smokers, using the "5A" approach (ask about smoking status, advise about the importance of quitting, assess willingness to quit, assist by providing basic cessation guidelines, and arrange for follow-up assistance). Follow-up will be provided by a primary care physician at each clinic, who will receive specialised training in smoking cessation intervention. All patients will receive behavioural counselling from a trained physician and will be randomised to receive either nicotine patch or placebo patch. The primary objectives of this study are: (1) determine prevalence, knowledge, attitudes, and beliefs related to tobacco use among Syrian primary care physicians and patients; (2) determine baseline and post-intervention tobacco use practices and policy implementation, as reported by both physicians and patients, in participating clinics; and (3) determine the efficacy of a combined behavioural/pharmacological smoking cessation intervention that can be feasibly implemented within Syrian primary care facilities.

Documenting the benefit of including pharmacological treatment as an adjunct to behavioural cessation counselling in Syrian primary care settings is crucial in order to support making these agents widely available. The results of this trial are expected to provide the first evidence about the efficacy and feasibility of smoking cessation interventions in an Arab population in the EMR.

AIM 3: CAPACITY BUILDING
Tackling the tobacco epidemic using an informed, evidence-based approach requires local capacity that can monitor the epidemic and study its defining features in order to suggest appropriate control strategies. Capacity building was thus one of the main objectives of the SCTS. SCTS has conducted several forms of training to create research capacity in Syria

What this paper adds

Smoking is a serious problem in Syria and the whole Eastern Mediterranean region. Until recently Syria lacked standardised and reliable data about the spread and characteristics of the smoking epidemic as well as expertise required to monitor and confront it.

Since its inception more than three years ago, the Syrian Center for Tobacco Studies (SCTS) has trained scientists and conducted research to build the knowledge base necessary to guide tobacco control efforts in Syria. On the epidemiological level, SCTS's population-based assessment of tobacco use in Syria shows that daily cigarette smoking is the predominant form of smoking, affecting 51.4% of men and 11.5% of women, and that waterpipe smoking is gaining ground, affecting 20.2% of men and 4.8% of women. Waterpipe smoking is characterised by intermittent use and predominance among the young and affluent. Clinical laboratory methods adapted by SCTS to the Syrian environment show that Syrian smokers of both methods demonstrate signs of dependence. These data, coupled with in-depth anthropological investigation of smokers' perceptions and experiences, have been used to guide cessation intervention development for Syrian smokers. The SCTS provides a useful model of efficient scientific cooperation and capacity-building in developing countries.

and the EMR including short training periods at advanced centres of research (University of Memphis, Virginia Commonwealth University, and the University of Muenster), ongoing distance-learning and mentorship, and financial support for Syrian and Arab researchers to attend major scientific conferences to present their data and network with specialists in their fields. While details of these training activities are beyond the scope of this article, two forms of training provided successful experience that can be shared and adopted in other developing country settings. The first is applied training—"training by doing"—for Syrian physicians with no prior research experience. This training model involves careful task selection, identification of skills required to perform the task, followed by conduction of focused training for the required skills. These iterative learning/application cycles proved to be highly efficient in that trainees could apply their new skills soon after acquisition, receive immediate feedback, and correct and refine their skills on an ongoing basis. This approach provided a successful cost-effective training model in our experience, and is likely to be helpful in other developing country settings where advanced degree academic programmes are not available or not economically feasible. The second form is distance learning and mentorship. Syrian researchers were connected with expert mentors in their field of interest for a year-long training course. Three Syrian researchers underwent this type of training with a focus on cessation intervention delivery. This training covered course materials based on Fiore et al[28] involving a combination of self readings, homework, report writing, and quizzes.

SCTS's training initiative has culminated recently with the establishment of the Research Assistance Matching Project (RAM, tobaccoresearch.net/ram.html) in collaboration with Johns Hopkins Bloomberg School of Public Health.[30] RAM is an innovative online programme designed to boost tobacco control research in developing countries.[30] Additionally, the SCTS has been able to establish scientific exchanges with researchers from many other nations, including Lebanon, Egypt, Yemen, Japan, and the UK, and "give back" in terms of providing data, methodologies, and expertise.

CONCLUSIONS

The seriousness of the tobacco epidemic in Syria is evident, based on data collected by the SCTS, and requires concerted and focused efforts on a variety of levels. Tobacco use is very widespread among the Syrian population with daily cigarette smoking being the most common, affecting 51.4% of men and 11.5% of women. Waterpipe smoking is also gaining ground in Syria, and is characterised by distinctive patterns of intermittent use and age and SES trends, with younger and affluent slices of society being most affected. Studies conducted by SCTS to gauge the smoking epidemic and dissect its salient features using anthropological, epidemiologic, and clinical laboratory methods are paving the way towards developing interventions to deal with smoking in the society.

Because of scarce resources and more pressing public health priorities, research initiatives from local authorities in Syria (and many countries of the EMR) that involved extensive planning, training, and funding, are few. As a result, public health research in Syria has been mainly an individual endeavour. One promising way to address this situation is to create partnerships between scientists and institutions in developed countries with local scientists who are eager to receive training and become integrated into a larger, international research community. The SCTS is an example of a successful model of international partnership between tobacco control researchers. It exemplifies the potential for developed/developing country partnerships to surpass the restricted scope of pure academic research in developing countries by establishing a permanent research base with its own momentum for expansion and growth. The long-term sustainability of such partnerships requires financial support from governments and the international scientific community that reaps benefit from the results of collaborative tobacco control research.

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