

# Cessation assistance reported by smokers in 15 countries participating in the International Tobacco Control (ITC) policy evaluation surveys

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## ABSTRACT

**Aims** To describe some of the variability across the world in levels of quit smoking attempts and use of various forms of cessation support. **Design** Use of the International Tobacco Control Policy Evaluation Project surveys of smokers, using the 2007 survey wave (or later, where necessary). **Settings** Australia, Canada, China, France, Germany, Ireland, Malaysia, Mexico, the Netherlands, New Zealand, South Korea, Thailand, United Kingdom, Uruguay and United States. **Participants** Samples of smokers from 15 countries. **Measurements** Self-report on use of cessation aids and on visits to health professionals and provision of cessation advice during the visits. **Findings** Prevalence of quit attempts in the last year varied from less than 20% to more than 50% across countries. Similarly, smokers varied greatly in reporting visiting health professionals in the last year (<20% to over 70%), and among those who did, provision of advice to quit also varied greatly. There was also marked variability in the levels and types of help reported. Use of medication was generally more common than use of behavioural support, except where medications are not readily available. **Conclusions** There is wide variation across countries in rates of attempts to stop smoking and use of assistance with higher overall use of medication than behavioural support. There is also wide variation in the provision of brief advice to stop by health professionals.

**Keywords** Country differences, quitting activity, quitting aids, quitting medications, smoking cessation, survey.

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## INTRODUCTION

The global community, through the World Health Organization's Framework Convention on Tobacco Control (FCTC), has agreed Guidelines for the implementation of Article 14 of the Convention, which deals with support for smoking cessation. Recent studies have shown that few countries have developed comprehensive support systems to help people to stop smoking [1,2]. Case studies

of treatment systems indicate a variety of models in place, with the greatest challenges being faced by large, lower-income countries [3]. However, very little is known about quitting activity within countries, how this varies as a result of the availability of different treatment systems and how this might inform the development of treatment systems across different countries.

Before smokers consider using cessation aids, they need to be interested in quitting smoking. Health-care

Additional contributions: Other leaders of ITC projects who checked the paper for appropriateness of any claims made about their countries were: Romain Guignard (French Institute for Health Promotion and Health Education, INPES, France), Martina Poetschke-Langer (German Cancer Research Center, Germany), Yuan Jiang (Chinese Center for Disease Control and Prevention, China), Hong-Gwan Seo (National Cancer Institute, South Korea), Edna Arillo-Santillán (Mexico), Marcelo Boado (Uruguay), Buppha Sirassamee (Mahidol University, Thailand), Maizurah Omar (Universiti Sains Malaysia, Malaysia) and Gerard Hastings (Stirling and Open Universities, UK).

services can only contribute directly to this interest when smokers use them, e.g. in consultations with health professionals. Advice from health-care professionals can increase successful quitting [4], medications such as nicotine replacement therapy (NRT) and varenicline are effective [5,6] and a range of support, ranging from automated personalized advice, through quitlines to face-to-face programmes, have also been shown to be effective [7,8].

This paper reports comparative data on the prevalence of recent quitting activity and the extent to which health professionals are advising their clients/patients to quit smoking in 15 countries participating in the International Tobacco Control (ITC) policy evaluation surveys. We also examined those who have made recent quit attempts and report on levels of reported use of a variety of forms of help, both medication and non-medication. We expected levels of quitting activity to be a function of extent of public education and other tobacco control efforts in the country, and use of support to be a function both of these and of the availability and accessibility of support within a country.

The data are provided not to make fine-grained comparisons between countries, but to assess large-scale differences and to analyse their implications.

## METHODS

The data came from 15 countries, ranging from high- to middle-income, that are surveying smokers as part of the ITC policy evaluation project. The ITC surveys are longi-

tudinal studies (usually with replenishment), and in those countries a majority of those surveyed were existing members of the cohorts. We have chosen the survey wave closest to 2007 in each country that has the bulk of the relevant measures. Details of the individual studies can be found at <http://www.itcproject.org>

Sample size by country and other details are in Table 1. The survey data are weighted to the age and sex distribution of smokers in the relevant populations. As can be seen from Table 1, survey methods differed across countries. The sample sizes for the different surveys yield 95% confidence intervals (CIs) of approximately 4% for prevalence estimates approximately 20%, and 5% for prevalence estimates of approximately 50%. These data are not presented alongside the actual data, so that the focus remains on the overall range of estimates across countries and not on detailed comparisons between countries. Methods were adopted to make the surveys as representative as possible for the populations sampled, and we have used weighting by survey weights to increase further the representativeness of the results. Face-to-face surveys used multi-level stratified sampling. Telephone surveys usually used random digit dialling, and the internet sample came from a large, broadly representative, panel.

Because recruitment into the ITC surveys is only of current smokers, we have restricted the analyses to those who were currently smoking at the time of the target survey, for countries where the wave used was not the first wave. This mode of sampling underestimates quitting activity by the proportion of quit attempts that

**Table 1** Characteristics of the samples of current smokers in the International Tobacco Control (ITC) Project countries.

Country	Year of survey	n	Mode	Sample	Survey wave
High income <sup>a</sup>					
New Zealand	2007–2008	1376	Telephone	National	1
Australia	2007–2008	1775	Telephone	National	6
Canada	2007–2008	1697	Telephone	National	6
United States	2007–2008	1723	Telephone	National	6
United Kingdom	2007–2008	1657	Telephone	National	6
Ireland	2006	582	Telephone	National	3
Netherlands	2009	1637	Telephone and internet	National	3
Germany	2009	912	Telephone	National	2
France	2008	1540	Telephone	National	2
South Korea	2008	1737	Telephone	National	2
Middle income					
Uruguay	2006	885	Face-to-face	Capital city	1
Mexico	2007	941	Face-to-face	4 cities	2
China	2007–2008	4623	Face-to-face	6 cities	2
Thailand	2006	1874	Face-to-face	National	2
Malaysia	2006–2007	1564	Face-to-face and telephone	National	2

More details on the individual surveys are available from the ITC website: <http://www.itcproject.org>. <sup>a</sup>Income status of countries is based on the latest World Bank classification. See <http://data.worldbank.org/about/country-classifications/country-and-lending-groups>.

occurred in the period asked about, but were ongoing at the time of the survey. One implication is that the quit attempts under discussion have been unsuccessful and somewhat shorter on average.

### Ethical clearance

Ethical clearance for the various components of this study were gained from the appropriate institutions in all participating countries.

### Measures

#### *Quit attempts in last year and ever*

At the initial survey, smokers were asked if they had ever tried to quit smoking and how recently their last attempt ended. For subsequent waves smokers were asked: 'Have you made any attempts to quit smoking since we last talked to you in (with date inserted)?', and if so, when. Only those reporting attempts in the last year were included as having made recent attempts.

#### *Visits to health professionals and advice about quitting*

Respondents were asked: 'Have you visited a doctor or other health professional since last survey date?' (for recontacted smokers, or 'in the last year' for newly recruited smokers). Those who had visited were further asked: 'During any visit to the doctor or other health professional, since last survey date (or in the last year), did you receive advice to quit smoking?'

#### *Use of medications*

Smokers were asked: 'In the last year (since <insert last survey date> have you used any stop-smoking medication?'; and if so, what, with nicotine replacement therapy (NRT) and prescription medications distinguished from other remedies. In countries where we had reason to believe that knowledge of stop smoking medications would be low the questioning was different. We first asked: 'Have you heard about medications to help people stop smoking, including nicotine gum or patches, stop smoking pills, such as bupropion or herbal medications?'. Only those who knew of such products were asked about use; the remainder were assumed not to have used.

#### *Use of quitlines, internet and dedicated clinics*

Respondents were asked: 'In the last year (last survey date, or 6 months in some cases), have you received advice or information about quitting smoking from any of the following? Telephone or quitline services; the internet; and 'local stop smoking services (such as clinics and

specialists)?'. Where the questions refer to different time intervals across countries, these are indicated clearly in the Results.

#### *Use of specific aids among those reporting making quit attempts*

Interest in quitting is one major factor determining demand for services and/or aids. To control in part for varying levels of interest in quitting across countries, we explore use of specific aids among those reporting having made a quit attempt in the relevant period. This excludes a small proportion of those who reported using a quit aid but failed to report a quit attempt.

## RESULTS

### Quitting activity

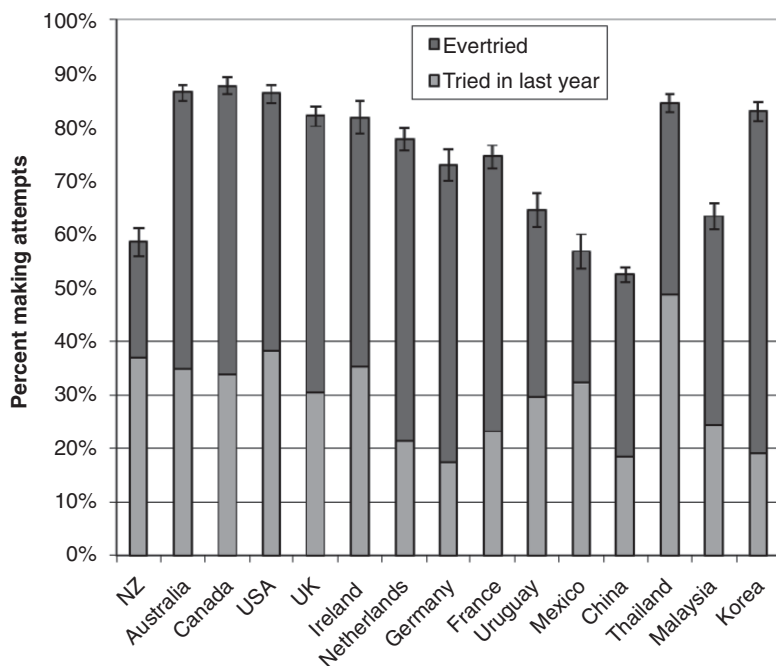
Recent quitting activity varied considerably by country (Fig. 1). Reports of ever having tried to quit varied from approximately 60% in New Zealand, Mexico and China to more than 80% in most of the other countries. Fewer than 20% of smokers in China and Malaysia reported recent attempts to quit compared with approximately 50% among smokers in Thailand. There was no clear relationship between the two measures; for example, New Zealand had low ever-quit rates but high recent quitting; Germany had high ever-quit rates, but low levels of recent activity.

### Health professional advice

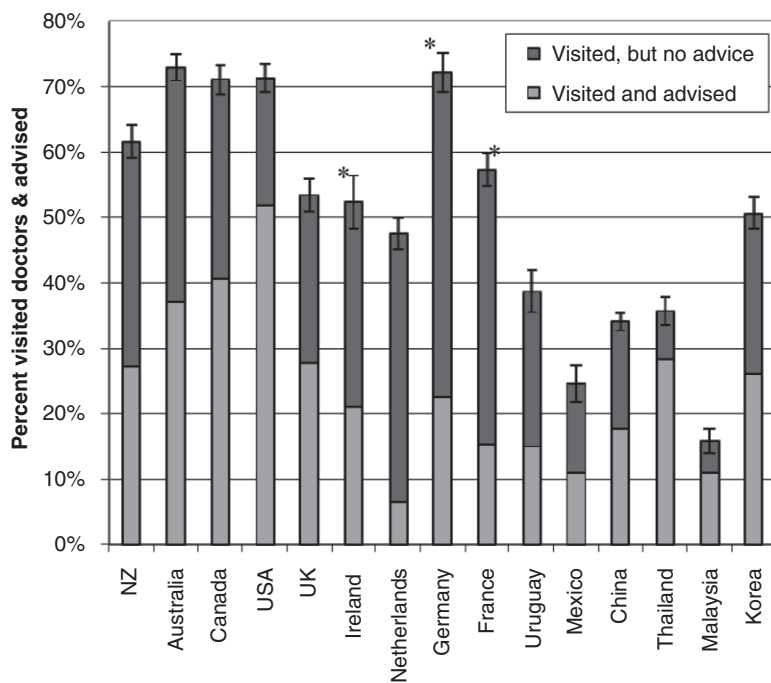
To ascertain the potential for health-care consultations to be an important locus for providing advice and motivation to quit smoking, we asked about visits to doctors or other health professionals for any reason. The level of such visits varied enormously, from 50% to 70% in most of the developed countries to fewer than 20% in Malaysia (Fig. 2). The likelihood of reporting obtaining advice to quit when they visited also varied markedly (Fig. 2). In some countries, including the United States, Thailand and Malaysia, more than two-thirds of those visiting a health professional reported obtaining advice, while in others, most notably the Netherlands, it was a clear minority, approximately 20%. This translates into overall advice to quit from health professionals ranging from less than 10% in the Netherlands to more than 50% in the United States.

### Use of cessation supports

Reported use of cessation support was restricted to those who reported making quit attempts, as this is the main factor determining use. Figure 3 shows much higher use of quit smoking medications among those who made quit



**Figure 1** Reported history of quit attempts by country. The total height of the bars refers to ever quit and the bottom part to those where there was an attempt in the last year; 95% confidence intervals (of the total height) are presented at the top of the bars



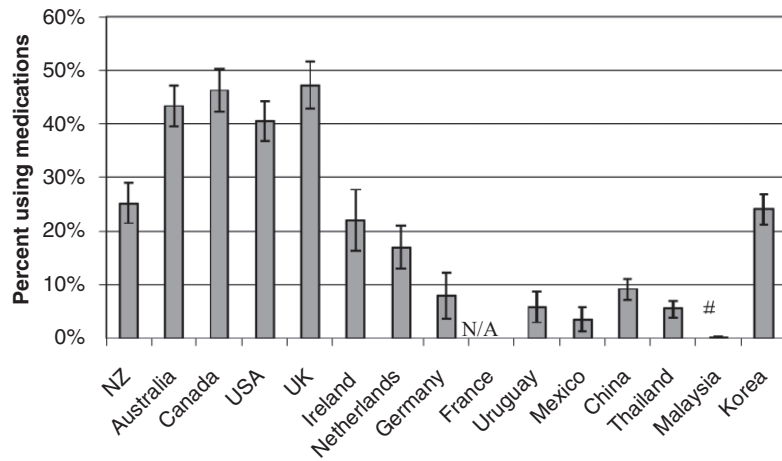
**Figure 2** Reported visits to doctors or other healthcare professionals and of advice to quit on any such visit by country. Interval is last year (or between waves), except where indicated with an asterisk \*, where it is 6 months; 95% confidence intervals (of the total height) are presented at the top of the bars

attempts in the previous year in western countries (more than 40% in Australia, Canada, United Kingdom and United States) than in the low- and middle-income countries, with negligible levels of recent use reported from Malaysia. Germany had notably low levels of use among the high-income countries. Korea had a moderate level of medication use, consistent with programmes supporting cessation there and Korea's relatively advanced economic conditions.

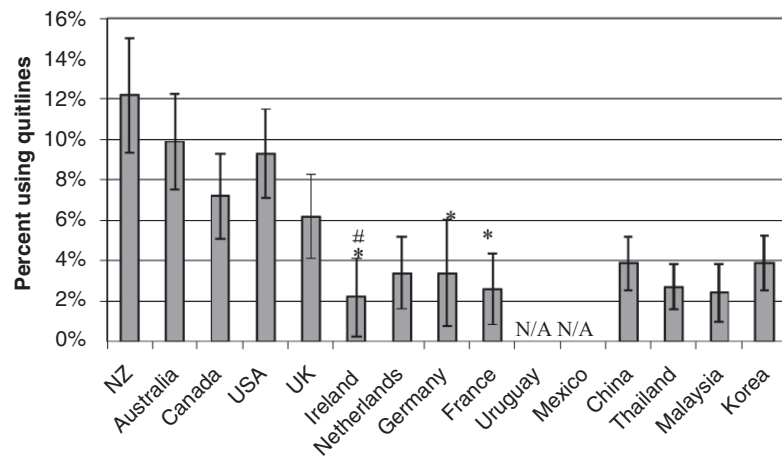
Use of advice-based behavioural supports was typically considerably lower than use of medications. Use of the quitlines (Fig. 4) ranged from a high of 12% in New Zealand to very low levels in some countries where the question was asked, but where facilities are known to be very limited. Surveys did not assess quitline use in countries where no service was offered.

Use of the internet for cessation support varied considerably (Fig. 5). Smokers in the Netherlands reported

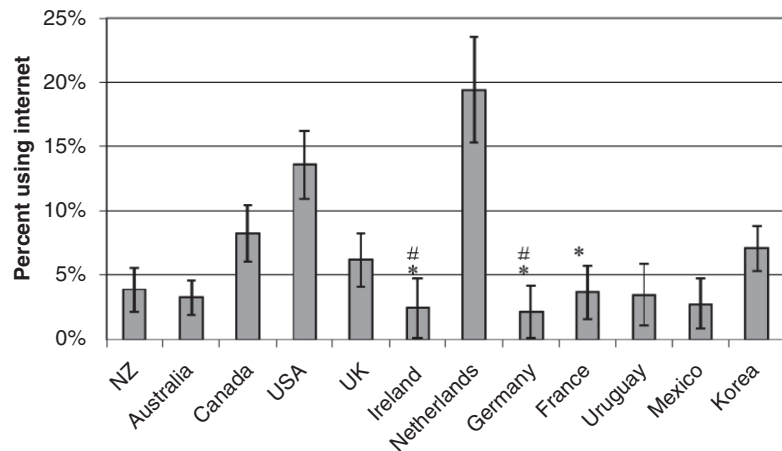
**Figure 3** Reported use of quit smoking medications in the last year, or between survey waves. Reported only among those reporting making quit attempts in the previous year. France did not ask for recent use; 95% confidence intervals are presented at the top of the bars. #The bar indicated is based on very small numbers of 'yes' answers (<5 cases)



**Figure 4** Reported use of quitlines (or related services) for assistance in smoking cessation (in the last year (previous survey), except where indicated by an asterisk, where it was for the last 6 months) by country, among those reporting making quit attempts in the previous year. Question not asked in Uruguay or Mexico because quitline did not exist at survey administration; 95% confidence intervals are presented at the top of the bars. #The bar indicated is based on very small numbers of 'yes' answers (<5 cases)

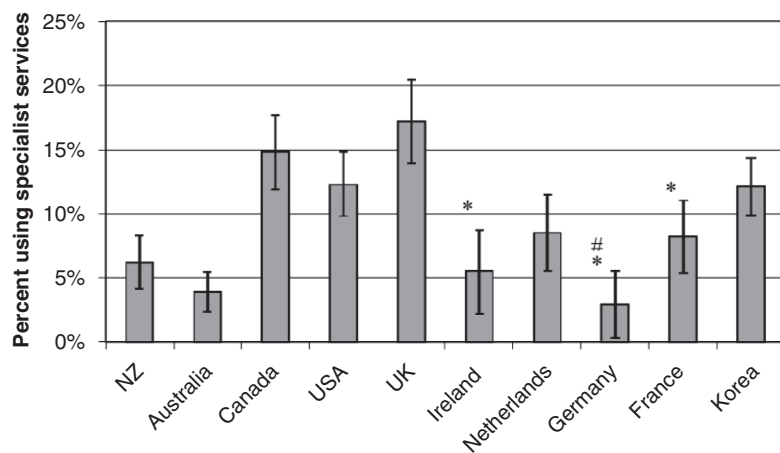


**Figure 5** Reported use of the internet as a source of smoking cessation advice (in the previous year except where indicated by an asterisk, where it is 6 months) by country among those reporting making quit attempts in the previous year. Countries not listed here were not asked; 95% confidence intervals are presented at the top of the bars. #The bars indicated are based on very small numbers of 'yes' answers



the highest use of the internet for quitting (nearly 20% of those making attempts), followed by the United States (approximately 13%), with lower levels in other countries where we asked. The high level of use in the Netherlands is likely to be due partly to most of that sample being surveyed on the internet, although the rate for this subsample was non-significantly higher in internet use than that for the telephone-surveyed subsample.

Similarly, the use of dedicated smoking cessation clinics was low (Fig. 6), with use of such services highest in the United Kingdom, which has a dedicated network of clinics. From several countries we have no comparable data, but in some of these at least we can be fairly sure that use of such services is minimal, as few if any are known to exist, and those that do are small and very localized.



**Figure 6** Reported use of specialist cessation services (e.g. clinics) in the past year (or where \*, 6 months) among those reporting quit attempts in the previous year. This question was not asked in the other countries or a non-comparable question was used; 95% confidence intervals are presented at the top of the bars. #The bar indicated is based on very small numbers of 'yes' answers

## DISCUSSION

There are considerable differences between countries in the level of quitting activity and the level and type of support used. This variation reflects some combination of differences in the history of tobacco control efforts, the capacity of the country or its smokers to afford different quit methods and the priority given to specific tobacco control policies (e.g. the relative emphasis given to public education, regulatory measures and provision of cessation assistance); and doubtlessly, more general cultural factors.

Generally speaking, less wealthy countries have fewer resources available to invest in smoking cessation relative to higher-income countries, both from governments and individuals. Our data showed that compared to smokers in those high-income countries, smokers in middle-income countries generally reported lower-level use of quitting smoking medications and health professional services, but not always less interest in quitting. Thailand, for example, reported the highest level of recent quit attempts, due probably to this survey following its first major mass media campaign, backed by several years of legislative reforms and a revered king who speaks strongly against tobacco use. Having a population educated about the harms of smoking and where smoking is institutionally discouraged may be a necessary condition for high levels of smoking cessation activity, but other factors are also clearly important in determining the extent to which this translates into use of help and or provision of advice by health professionals.

Published evidence shows that mass media campaigns to encourage quitting make a large difference to quitting activity [9], and we see this in our as-yet unpublished data. For example, earlier waves of the ITC surveys in Korea and Malaysia, taken just after or during large campaigns, found rates of recent quitting much higher

than those reported here, while the reverse was the case in Thailand, where the data reported here followed its first large-scale mass media campaign. Published evidence also shows that other population-level activities such as the introduction of stronger health warnings on cigarette packages [10] and increases in the price of tobacco products can increase quitting activity in a population [11,12].

One of the most striking findings is the diversity across countries in the use of health professionals and in the encouragement they provide for quitting. Overall, the lower-income countries reported fewer visits to health professionals; for example, Mexico and Malaysia were particularly low. However, on a note of caution, the low level of reporting visits in Malaysia, coupled with the high level of reporting obtaining advice, raises the possibility that some smokers, at least in Malaysia, answered about visiting health professionals in relation to their smoking, not visits in general. The Malay translation of this question makes it less clear than elsewhere that any visit is meant. That said, there is little doubt that some of the differences we report are real. We suspect that in many, if not most, of the world's poorer countries, levels of visiting health professionals will be even lower than those reported here for the middle-income countries.

The potential role of health professionals in encouraging cessation is likely to be more limited in countries where smokers consult them less frequently. Further, when visits are more rare, the presenting problems may be more serious, and time constraints may be more likely to squeeze out mention of smoking cessation, especially where it is not relevant to the reason for the consultation.

The highest levels of advice to quit were found in the United States, where there has been a great deal of effort to encourage doctors to apply evidence-based guidelines, including those for smoking cessation [13] based on evidence that such advice can motivate quitting [4]. However, our data suggest that in some countries doctors

are not providing advice as often as they might. For example, we found low rates of providing advice in the Netherlands. We understand that many Dutch physicians are reluctant to intervene with what many consider the right of patients to 'choose' the life-style they want. As a result, most restrict their advice on this matter to patients with smoking-related complaints. However, reporting that doctors do not seem to take smoking cessation seriously [14] is a commonly voiced rationalization for continuing to smoke, at least in those western countries where it has been studied. Tobacco control advocates should try to convince doctors who are reluctant to provide advice that free choice necessarily involves having adequate knowledge relevant to that choice, and thus they, as health experts, have a responsibility for ensuring that their patients have a realistic understanding of how continuing to smoke risks compromising their long-term health. Doctors should raise the issue, encourage cessation to reduce risks, discuss options and offer whatever help they can (e.g. referring or otherwise pointing their patients/clients in the direction of evidence-based forms of assistance where they are available).

Even in the country where smokers are most likely to receive quit advice from health professionals (the United States), our data suggest that only half of all smokers receive any such advice each year. This highlights the importance of reaching many smokers through interventions outside the formal health system, such as mass media campaigns or pictorial pack warnings that promote quitting. Population-level interventions are a critically important part of encouraging smokers to use whatever help is available if they feel unable to quit without assistance. Further, promoting services to assist cessation may help to make public information campaigns more effective because they signal the importance of taking action.

As would be expected, use of smoking cessation medications also varied greatly by country, undoubtedly due greatly to limits on affordability and availability in some countries. In some countries, typically richer ones, cessation medications are paid for or subsidized by the government (e.g. United Kingdom, New Zealand) or health insurance schemes (for many in the United States), and this is likely to increase use. Germany, which is rich and where medications are widely available and promoted, but which has no subsidies, had low levels of use of medication. However, the role of subsidies is not always a major factor. For example, Australia had much high levels of medication use, most being NRT, which is not subsidized [15]; and New Zealand, with a sophisticated and widely available subsidy scheme, has relatively low levels of medication use.

Before smokers will begin to use aids, they must want to or at least be convinced of the need to quit smoking,

and then they need to believe that some form of available help is likely to assist them. They also need to have the idea of using aids at the top of their minds, and as there may be less promotion of aids when they are subsidized, this might act to counter the use promoting function of reduced price. To the extent that the low use in some places reflects low demand, then it will be important to create more interest in quitting smoking and a greater realization of the benefits of assistance before rates of use are likely to approach those achieved in countries where reported use levels are nearing half of those making quit attempts.

Use of other forms of assistance was generally lower than use of cessation medications. The forms of support, as well as the overall amount, vary by country. For example, New Zealand and Australia provide most assistance through quitlines, while the United Kingdom focuses on face-to-face services, and the internet is the preferred delivery mode in the Netherlands. The relatively high quitline use in New Zealand probably reflects its provision of heavily subsidized NRT [16], and in both Australia and New Zealand heavy promotion of the services, including having the telephone number on cigarette packs as part of the health warning material, clearly contributes to the higher levels of use [17]. In the Netherlands, high level of internet use is related to very high high-speed internet access (>90% of the population) and the wide promotion of internet-based cessation support by STIVORO, including tailored advice on a self-help smoking cessation website, all integrated with the national telephone quitline [18]. All mass media cessation campaigns refer to the website and not the quitline number, so the website is seen as the first place to go.

The generally low level of use of help, even in countries where smoking prevalence has reduced markedly and such help is widely available, shows that availability of help is not sought by many, and is not necessary to make progress in reducing prevalence. However, help can play an important role because smokers can increase their chances of quitting by using it, and there is some evidence that the provision of services can also encourage self-quitting [19].

It is important to be clear about the limitations of these multi-country comparisons and how they limit the conclusions that can sensibly be drawn. This paper is designed to provide an overview of some large-scale differences between countries to stimulate thinking as to why and what the implications of these large differences might be for policies that relate to the provision of supports for smoking cessation. Small differences (for example, fewer than 5%) should be interpreted with extreme caution, and then only as a suggestion of the need to seek corroborating data from other sources to

determine if they do reflect an underlying reality. The ITC Project interviews were completed in several languages, and although we took care with translations to equate concepts, inevitably the nuances of words differ and these differences may have had some effect on the results. We only surveyed smokers, so we miss quitting activity from recent quitters, thus underestimating quitting activity marginally, but this is common for all countries. Similarly, different data collection modes (e.g. face-to-face interviews versus telephone interviews) might have had some effect, as might differences in response rates. In analyses not reported here we have looked at both kinds of differences. In countries where we used mixed modes of responding, we do not find large survey mode differences. We have also looked for differences in responding between new recruits into our survey and those retained from previous waves (an increasingly less representative group), and have found only no or small effects (in the order of 2–3% differences in estimates), so sampling effects probably contribute only a small amount to the variance. Further interwave intervals varied and even where we asked about a set period, having a reference of a previous survey close to the reference time might have affected responding. We do not know the size of such effects but believe they are typically small, are most likely to affect reports of events occurring (e.g. of quit attempts and the use of health professionals) rather than what was conducted on such occasions (use of aids). Further, any biases due to different levels of familiarity with the form of assistance would most probably have acted to reduce the observed differences: over-reporting the rare and under-reporting the more commonplace (e.g. any use of medication, even trying, might be reported where use of medication is rare, but in a context of widespread use more extensive use might be expected before the person would report 'really' using it on a quit attempt). Finally, in some countries (China, Mexico, Uruguay) we only surveyed in some cities, so these results should not be generalized to the entire countries, particularly not to rural areas where conditions are much different. We believe that the differences we highlighted are likely to be real between-country differences, but reiterate that readers should not interpret differences between countries of less than approximately 5% without corroborating evidence.

This study included 10 high-income and five middle-income countries, but no data were available from the low-income countries included more recently in the ITC study (e.g. Bangladesh). Future studies of this kind will be able to include such countries, using both ITC data and data from other sources, such as the Global Adult Tobacco Survey (GATS).

This study shows that tobacco control strategies that focus on service delivery, or advice-giving, within the health-care system are likely to have limited impact in

low- and middle-income countries because contacts with such services are less common. Population-based strategies will be even more important in these countries to encourage smokers to consider quitting and, where necessary, to seek out help. These strategies include mass media campaigns, pictorial health warnings on tobacco packaging and higher taxes on tobacco products [1], and can produce rapid variations in interest in quitting and quit-related activity. Cessation services can and do provide useful functions. Countries need to consider how to provide such services (including both pharmaceuticals and advice-based help) in ways that best fit into their existing health-care system, and to ensure that they are accessible, affordable and widely promoted. Even where an extensive range of services and aids are available and promoted many smokers do not use them, suggesting that demand for such services is something that only grows gradually with prolonged public education and denormalization of smoking. Allowing services to grow organically with demand is one way to maximize benefits and to minimize initial costs.

#### Declarations of interest

No author has any conflict of interest, although some have associations with organizations that deliver smoking cessation services.

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