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Progress in implementation of the WHO FCTC Article 14 for tobacco dependence treatment internationally

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ABSTRACT

Tobacco use is the leading cause of preventable disease, disability and premature death globally. While tobacco consumption has decreased in many high income countries, demand for tobacco continues to grow in many low and middle income countries. Offering tobacco users help to stop using tobacco is a key demand reduction measure outlined under Article 14 of the World Health Organisation (WHO) Framework Convention on Tobacco Control (FCTC) a global public health treaty ratified by 180 countries and covering almost 90% of the world's population. The main aim of this thesis was to assess progress in implementation of FCTC Article 14 and its guidelines globally and explore the association between implementation and country income level, focussing on tobacco treatment guidelines development, tobacco dependence treatment provision, and tobacco use among healthcare workers (HCWs).

A global online survey of a purposive sample of tobacco treatment experts was conducted to assess implementation of tobacco dependence treatment infrastructure and provision. A separate online survey of tobacco treatment guidelines was conducted to assess guidelines content (whether they reflect the Article 14

recommendations to be evidence based and comprehensive in terms of treatment settings and providers), and the association with country income level. Guidelines online accessibility was assessed and guidelines content reviewed for recommendations addressing tobacco use by HCWs. A systematic review and meta-analysis were used to estimate the global prevalence of tobacco use in HCWs by gender, occupation and country income level and changes in prevalence between 2000 and 2014.

In 2015, only a minority of 142 respondent countries had comprehensive tobacco dependence treatment provision and had implemented key infrastructure measures as required by Article 14. Among the measures with the lowest level of reported implementation were a national tobacco treatment strategy (32%), national tobacco treatment guidelines (40%), mandatory recording patients' tobacco use in medical notes (30%), helping HCWs to stop using tobacco (44%), and a budget for treatment (25%). Less than half of countries had brief advice integrated into existing healthcare services, 23% had free national quitlines and 26% had specialised tobacco cessation services. Availability and affordability of tobacco cessation medications were very limited in low income countries. There was little progress in implementation of Article 14 since 2012, and for most measures provision was positively associated with country income level.

Approximately 61 countries had national tobacco treatment guidelines in 2016, of which five were newly developed, an increase of less than 10% since 2012. The guidelines were disproportionately distributed by income level, with over two thirds reported in high income countries, and none in low income countries. The guidelines varied by professions, settings and client groups. The majority of guidelines included doctors as tobacco treatment providers and primary care settings while other health professionals and settings were included mostly in high income country guidelines. Compared with high income countries, fewer middle income countries guidelines covered nurses and dentists. Guideline recommendations that did not differ by income level included brief advice, nicotine replacement therapy and recording tobacco use in medical notes, while quitlines, intensive specialist support, bupropion and varenicline were more common in high income countries' guidelines. There was a positive association between guidelines updating (13% of guidelines had not been updated for 10 or more years) and country income level.

Addressing tobacco use by HCWs in national treatment guidelines and provision of specific programmes promoting cessation and offering tobacco treatment to HCWs who use tobacco is another key recommendation laid out in the Article 14 guidelines. The

review of 34 national guidelines that were available to access online showed that the majority did not include statements that HCWs should not use tobacco and only 12% recommended cessation support for HCWs who use tobacco.

The overall estimated prevalence of tobacco use among HCWs between 2000 and 2014 was 22%, ranging from 7% in nurses in low and middle income countries to 27% in nurses in upper middle income countries, and from 17% in doctors in high income countries to 25% in doctors in upper middle income countries. Prevalence varied by gender, occupation and income level. Male medical doctors in middle and low income countries had the highest prevalence, 35% and 45% respectively. Female nurses in middle and high income countries also had elevated prevalence, 24% and 21% respectively. Despite some decreases in HIC and UMIC, the estimated prevalence did not show any significant declines in recent years.

Compared with the smoking prevalence rates in the general population of their countries, male HCWs in high income countries tend to have lower prevalence rates while male and female HCWs in middle and low income countries tend to have similar or higher prevalence rates relative to their counterparts in the general population.

Overall, there has been little progress in the implementation of FCTC Article 14 in recent years, with a growing gap in tobacco treatment provision between countries with different income levels. Cost, real or perceived, appears to be a major barrier to the implementation of tobacco dependence treatment measures. Smoking prevalence among HCWs is a seriously neglected area that needs urgent action. There is much room for improvement in low and middle income countries where most of the world's smokers reside and the demand for cessation support is growing. While the lack of resources and funding for cessation is a significant barrier to implementation, there are a number of measures all countries can implement relatively quickly and at a low cost. Brief advice from a healthcare worker, printed self-help materials, automated text-messages, cytisine and nortriptyline have been identified as affordable treatment options for tobacco cessation across all countries. Countries also urgently need to address tobacco use among HCWs and implement cessation programmes and interventions specifically targeting these populations.

OUTLINE OF THE THESIS

The thesis consists of six chapters.

Chapter one summarises the current trends in the global tobacco epidemic, the tobacco dependence treatment evidence base, the origins of tobacco control, and discuss the FCTC policy recommendations concerning tobacco dependence treatment and the role of healthcare workers in promoting tobacco cessation. At the end of Chapter one justification for the thesis and research aims and objectives are presented.

Chapter two investigates the implementation of FCTC Article 14 by assessing the level of tobacco treatment infrastructure and provision in 142 FCTC Parties and progress in implementation in 99 Parties.

Chapter three investigates national tobacco treatment guidelines content and compliance with the recommendations of Article 14 guidelines.

Chapter four investigates national tobacco treatment guidelines recommendations on tobacco use by healthcare workers.

Chapter five investigates smoking among HCWs worldwide and provides an estimation of prevalence by country income level, occupation, and gender.

Chapter six summarises the findings of the preceding chapters, presents overarching conclusions, identifies gaps in research and suggests future research directions.

Publications arising from this thesis

Nilan K, McKeever TM, McNeill A, Raw M, Murray RL. Prevalence of tobacco use in healthcare workers worldwide: A systematic review and meta-analysis. *Submitted for publication*.

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Conference presentations

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TABLE OF CONTENTS

ABSTRACT ii

TABLE OF CONTENTS..... xiv

TABLE OF TABLES..... xxii

TABLE OF FIGURES xxv

CHAPTER 1: Introduction.....1

1.1 The global tobacco epidemic.....1

1.1.2 Trends in the global tobacco epidemic.....2

1.1.3 Nicotine dependence.....3

1.1.4 Health effects of tobacco use 6

1.1.5 Cost of smoking.....8

1.1.6 The benefits of tobacco cessation 10

1.2 Tobacco dependence treatment.....11

1.2.2 Evidence based tobacco dependence treatment guidelines.....12

1.2.3 Tobacco dependence treatment approaches.....13

1.2.3.1 Behavioural support.....13

1.2.3.2 Pharmacotherapy.....23

1.2.3.3 Alternative cessation methods.....31

1.2.3.4 Efficacy, effectiveness and cost-effectiveness of tobacco dependence treatment strategies.....31

1.2.4 Assisted versus unassisted tobacco cessation 33

1.3 Tobacco dependence treatment and tobacco control.....35

1.3.1 The origins of tobacco control.....35

1.3.2 The Framework Convention on Tobacco Control.....40

1.3.3 Effects of tobacco control policies on tobacco cessation .42

1.3.4 FCTC Article 14 and the Article 14 guidelines recommendations.....47

1.3.5 FCTC implementation and monitoring 50

1.3.5.1 FCTC implementation guidelines……..50

1.3.5.2 Monitoring tools……51

1.3.5.3 The tobacco industry and FCTC implementation…...55

1.3.5.4 Progress in FCTC implementation……56

1.3.6 Progress in implementation of FCTC Article 14 and Article 14 guidelines.....57

1.3.7 Article 14 and the role of healthcare workers in tobacco cessation.....59

1.3.8 The global tobacco epidemic and healthcare workers 59

1.4 Justification for thesis……..63

1.5 Aims and objectives……65

CHAPTER 2: A survey of tobacco dependence treatment provision

2.1 Introduction……...67

2.2 Aims……...68

2.3 Methods……68

2.3.1 The survey contacts and data collection 68

2.3.2 The survey questionnaire 70

2.3.3 Analysis.....70

2.4 Results……...71

2.4.1 Response rate 71

2.4.2 Basic tobacco treatment infrastructure.....71

2.4.3 Cessation support systems.....74

2.4.4 Changes in treatment provision since 2012 81

2.5 Discussion……83

2.5.1 Main findings 83

2.5.1.1 Basic treatment infrastructure……..84

2.5.1.2 Tobacco cessation support systems……86

2.5.1.3 Progress in implementation of Article 14 since 2012……...90

2.5.1.4 Association between implementation and income level……91

2.5.2 Strengths and limitations 92

2.5.3 Conclusions.....94

CHAPTER 3: A survey of tobacco dependence treatment guidelines content

3.1 Introduction……...95

3.2 Methods……97

3.2.1 The survey sample 97

3.2.2 The survey questionnaire 97

3.3 Results……...99

3.3.1 The survey response rate 99

3.3.2 Guidelines distribution by WB country income level.....100

3.3.3 Professions, settings and client groups covered in guidelines.....100

3.3.4 Guideline content 102

3.3.5 Guidelines writing, dissemination and funding 110

3.3.6 Guidelines publishing and updating 112

3.3.8 Association between guidelines updating and content...116

3.4 Discussion……..117

3.4.1 Main findings 117

3.4.1.1 Guidelines content and key recommendations……118

3.4.1.2 Guidelines funding, writing and review process…...119

3.4.1.3 Guidelines updating and dissemination strategy….120

3.4.2 Strengths and limitations 122

3.4.3 Conclusions.....125

CHAPTER 4:. Addressing tobacco use among HCWs in national tobacco

treatment guidelines .....

4.1 Introduction…….127

4.2 Aims…….128

4.3 Methods……..128

4.4 Results…….129

4.4.1 National guidelines accessed online…….....129

4.4.2 Recommendations addressing tobacco use among HCWs in 34 national tobacco treatment guidelines.....133

4.5 Discussion……..138

4.5.1 Main findings 138

4.5.2 Strengths and limitations 142

4.5.3 Conclusions.....143

CHAPTER 5: A systematic review of prevalence of tobacco use in HCWs

5.1 Introduction…….145

5.2 Aims…….145

5.3 Methods……..145

5.3.1 Eligibility criteria.....146

5.3.2 Search strategy 146

5.3.3 Study selection 147

5.3.4 Data extraction 147

5.3.5 Quality assessment 149

5.3.3 Statistical analyses 149

5.4 Results…….150

5.4.1 Study selection procedure 150

5.4.2 Summary of studies.....153

5.4.3 Meta analyses 177

5.4.3.1 Prevalence of tobacco use by WB country income level…….177

5.4.3.2 Prevalence of tobacco use by occupation……..177

5.4.3.3 Prevalence of tobacco use by occupation and WB country income level…….....184

5.4.3.4 Prevalence of tobacco use by gender and income level…….193

5.4.3.5 Prevalence of tobacco use by gender and occupation……..196

5.4.3.6 Prevalence of tobacco use by year……206

5.4.3.7 Subgroup analysis by quality score……211

5.4.3.8 Prevalence of tobacco use in HCWs and the general population - a country level comparison……213

5.5 Discussion……..216

5.5.1 Main findings 216

5.5.2 Strengths and limitations 221

5.5.3 Conclusion 223

CHAPTER 6: Conclusions and future directions 225

6.1 Summary of findings…….225

6.1.1 Tobacco treatment infrastructure 226

6.1.2 Tobacco treatment provision 227

6.1.3 Tobacco use among health professionals.....228

6.2 Implications……229

6.3 Methodological considerations and limitations…….236

6.4 Next steps……...239

6.5 Conclusions……241

REFERENCES……242

APPENDICES……...273

APPENDIX I Tobacco Treatment Survey Questionnaires…….273

Tobacco Treatment Questionnaire in English.....273

Tobacco Treatment Questionnaire in Spanish.....281

Tobacco Treatment Questionnaire in French 291

Tobacco Treatment Questionnaire in Russian.....300

Tobacco Treatment Survey Invitation email.....310

APPENDIX I Tobacco Treatment Guidelines Questionnaires……...313

Tobacco Treatment Guidelines Questionnaire in English……...313

Tobacco Treatment Guidelines Questionnaire in French.....324

Tobacco Treatment Guidelines Survey Invitation email.....330

APPENDIX III Survey Respondent Countries……333

Respondent countries in Tobacco Treatment Survey 333

Respondent countries in Treatment Guidelines Survey……338

APPENDIX IV Systematic Review Search Strategy and Data

Example of search terms.....340

Data Extraction and Quality Assessment Form 342

APPENDIX V…….344

Prevalence of tobacco use comparison: male HCWs compared with males in the general population by country……...344

Prevalence of tobacco use comparison: female HCWs compared with females in the general population by country……...347

TABLE OF TABLES

Table 2.1 Basic treatment infrastructure by WB country income level.....74

Table 2.2 Tobacco cessation support systems by WB country income leve……76

Table 2.3 Availability of cessation medications by WB country income level……...80

Table 2.4 Affordability of cessation medications by WB country income leve……..82

Table 2.5 Country respondents in two surveys by WB country income leve……83

Table 2.6 Changes in treatment provision between 2012 and 2015……..84

Table 3.1 Tobacco treatment guidelines survey response rate……101

Table 3.2 Professions, settings, and client groups covered in guidelines by WB country income level……103

Table 3.3 Professions, settings, and client groups covered in guidelines: UMIC and LMIC compared with HIC…….....104

Table 3.4 Guidelines key recommendations by WB country ncome level…….106

Table 3.5 Guidelines key recommendations: UMIC and LMIC compared with HIC guidelines…….....107

Table 3.6 Guidelines recommendations for cessation medications by WB country income level……..108

Table 3.7 Recommended cessation medications in guidelines: UMIC and LMIC compared with HIC……109

Table 3.8 Guidelines other content by WB country income level….110

Table 3. 9 Other guidelines content: UMIC and LMIC compared with HIC……..111

Table 3.10 Guidelines writing and review process by WB country income level……..113

Table 3.11 Guidelines writing, dissemination and funding: UMIC and LMIC compared with HIC....114

Table 3.12 Guidelines published and/or updated by country and year according to multiple survey data....115

Table 3.13 Association between guidelines updating and WB country income level....118

Table 3.14 Recommendations included in guidelines published or updated before and after 2012....119

Table 4.1 National tobacco treatment guidelines available online....133

Table 4.2 Addressing tobacco use among HCWs in national tobacco treatment guidelines (n=34)....136

Table 4.3 Guidelines recommendations concerning tobacco use among HCWs by WB country income level....139

Table 5.1 Summary table of data by year of data collection, HCWs occupation and WB country income level....156

Table 5.2 Summary of study quality score....158

Table 5.3 Summary of studies in lower middle and low income countries (LMLIC)....159

Table 5.4 Summary of studies in upper middle income countries (UMIC)....162

Table 5.5 Summary of studies in high income countries (HIC)....168

Table 5.6 Prevalence of tobacco use in HCWs by WB country income level....179

Table 5.7 Prevalence of tobacco use in HCWs by occupation....180

Table 5.8 Prevalence of tobacco use in HCWs by occupation and WB country income level....187

Table 5.9 Prevalence of tobacco use in HCWs by gender and WB income level....195

Table 5.10 Pooled prevalence of tobacco use in male and female medical doctors by WB income level....201

Table 5.11 Pooled prevalence estimates in nurses by gender and WB country income level....205

Table 5.12 Overall pooled prevalence of tobacco use in HCWs by WB country income level and year....209

Table 5.13 Subgroup analyses by study quality score 214

Table 5.14 Male and female prevalence of tobacco use in medical doctors compared with the general population according to WHO data for 2012 223

TABLE OF FIGURES

Figure 1.1 Projections of smoking caused mortality with and without treatment of current smokers (Source: Henningfield, Tobacco Control 2000; 9 (Suppl I):i3–i10)…….36

Figure 2.1 Access to cessation support in different settings by WB country income level…….....79

Figure 5.1 Study selection procedure……....154

Figure 5.2 Pooled prevalence of tobacco use in nursing HCWs…….....181

Figure 5.3 Pooled prevalence of tobacco use in mixed HCWs.....182

Figure 5.4 Pooled prevalence of tobacco use in medical HCWs.....184

Figure 5.5 Pooled prevalence of tobacco use in dental HCWs…….185

Figure 5.6 Pooled prevalence of tobacco use in pharmacy HCWs…..185

Figure 5.7 Pooled prevalence of tobacco use in allied HCWs……...186

Figure 5.8 Pooled prevalence of tobacco use in medical HCWs by WB country income level……188

Figure 5.9 Pooled prevalence of tobacco use in nursing HCWs by WB country income level……189

Figure 5.10 Pooled prevalence of tobacco use in dental HCWs by WB country income level……190

Figure 5.11 Pooled prevalence of tobacco use in pharmacy HCWs by WB country income level……191

Figure 5.12 Pooled prevalence of tobacco use in allied HCWs by WB country income level……192

Figure 5.13 Pooled prevalence of tobacco use in mixed HCWs by WB country income level……194

Figure 5.14 Pooled prevalence of tobacco use in male HCWs by WB country income level……196

Figure 5.15 Pooled prevalence of tobacco use in female HCWs by WB country income level……197

Figure 5.16 Pooled prevalence of tobacco use in male medical doctors……199

Figure 5.17 Pooled prevalence of tobacco use in female medical doctors……200

Figure 5.18 Pooled prevalence of tobacco use in male medical doctors by WB income level…….....202

Figure 5.19 Pooled prevalence of tobacco use in female medical doctors by WB income level……..203

Figure 5.20 Pooled prevalence of tobacco use in male nurses……204

Figure 5.21 Pooled prevalence of tobacco use in female nurses…….204

Figure 5.22 Pooled prevalence of tobacco use in male nurses by WB country income level ……206

Figure 5.23 Pooled prevalence of tobacco use in female nurses by WB country income level……206

Figure 5.24 Pooled prevalence of tobacco use 2000-2005 by WB country income level……210

Figure 5.25 Pooled prevalence of tobacco use 2006-2010 by WB country income level……211

Figure 5.26 Pooled prevalence of tobacco use 2011-2014 by WB country income level……212

CHAPTER 1: Introduction

1.1 The global tobacco epidemic

The global tobacco epidemic is a recent phenomenon that emerged at the beginning of the 20th century, a few decades after the mass production of cigarettes had started (1). The beginning of a tobacco epidemic typically occurs in men first and then in women, and is manifested by an increase in smoking related deaths 20–30 years after the onset of smoking (1). Data from high income countries have shown that tobacco kills half of its long term users, with an estimated half of the deaths in middle age (35-69 years) attributable to the harmful effects on health caused by tobacco (2).

Tobacco is the single most preventable cause of disease, disability and premature death globally (3, 4). In the last century the tobacco epidemic killed 100 million people worldwide, most of them in high income countries (5). In this century, if the current smoking trends continue, there will be one billion tobacco related deaths, most in low and middle income countries (5, 6).

According to the World Health Organisation (WHO), six million people die each year from direct and indirect effects of smoking (7) and this figure is projected to reach over 8 million annually (8), with an estimated 80% in low and middle income countries (8-10) where tobacco

consumption is high and quit rates are low (9, 11, 12). In 2010, more than two thirds of the global deaths attributable to tobacco were in low and middle income countries (13). Based on current trends in smoking prevalence, many countries may not achieve the global non-communicable disease (NCD) target to reduce tobacco use by 30% by 2025 (14).

1.1.2 Trends in the global tobacco epidemic

Since the 1980s, large reductions in the estimated prevalence of daily smoking were observed for both men and women globally. Despite the decrease in daily tobacco smoking from 41.2% in 1980 to 31.1% in 2012 in men, and from 10.6% to 6.2% in women, because of the population growth the number of smokers globally has increased from 721 million in 1980 to 976 million in 2012 (15), with an estimated one in ten smokers living in developing countries (13, 16).

While the demand for tobacco has decreased in many high income countries over the last 20 years (17) and most ex-smokers are now residing in high income countries (18), the production of tobacco has doubled since the 1960s and cigarette consumption is increasing rapidly in low income countries. Cigarette consumption continues to rise in China, including female smoking (19), and India, where the tobacco industry manufactured cigarettes are displacing locally produced bidis

(5). The prevalence of cigarette smoking is predicted to rise over the next decade in Africa and the Eastern Mediterranean region (20), and if the current trends continue there would be an estimated 1.1 billion tobacco smokers in 2025 (20).

1.1.3 Nicotine dependence

Based on available scientific evidence, the 1988 Report of the US Surgeon General concluded that nicotine, the principal pharmacological agent common to all forms of tobacco, is a psychoactive drug that causes tobacco addiction and that the pharmacological and behavioral processes of tobacco addiction are similar to those that determine addition to drugs such as heroin and cocaine (21).

A Report published by the Royal College of Physicians in 2000 described the neural mechanisms of nicotine addiction in humans and why nicotine delivered through smoking is particularly addictive, concluding that cigarettes are the most efficient delivery systems of nicotine into the body that cause and sustain addiction and most smokers do not smoke out of choice but because they are addicted to nicotine (22).

The WHO's International Classification of Diseases ICD-11 describes nicotine dependence as "a disorder of regulation of nicotine use arising

from repeated or continuous use of nicotine. The characteristic feature is a strong internal drive to use nicotine, which is manifested by impaired ability to control use, increasing priority given to use over other activities and persistence of use despite harm or negative consequences. These experiences are often accompanied by a subjective sensation of urge or craving to use nicotine. Physiological features of dependence may also be present, including tolerance to the effects of nicotine, withdrawal symptoms following cessation or reduction in use of nicotine, or repeated use of nicotine or pharmacologically similar substances to prevent or alleviate withdrawal symptoms. The features of dependence are usually evident over a period of at least 12 months" (23).

It is now well established that nicotine is the drug in tobacco that is primarily, but not entirely, responsible for the addiction to smoking in the population. In comparison with other addictive substances such as opioids, stimulants and sedatives, the risks of developing tobacco addiction and the severity and persistence of smoking even in the face of ill health are particularly high. However, in contrast with sedatives such as alcohol physiological dependence, intoxication and withdrawal are less pronounced and nicotine intoxication occurs rarely in regular tobacco users (22).

Nicotine addiction depends on the amount and the way in which nicotine is delivered. Inhaled nicotine enters the circulation through the lungs resulting in rapidly rising nicotine concentrations and reaching the brain in about 10 to 19 seconds (24). Nicotine containing medicinal products such as various forms of nicotine replacement therapy tend to have a slower rate of delivery and a lower amount of nicotine absorption, thus, compared with cigarette smoking medicinal nicotine products have relatively minimal potential for addiction.

The neurobiological mechanisms underlying nicotine dependence have been studied extensively and the evidence from both animal and human studies suggests that addiction to tobacco smoking is complex. Nicotine produces pharmacological actions by binding to the nicotinic acetylcholine receptors in the brain (nAChRs). The stimulation of the nicotinic receptors triggers the release of various neurotransmitters in the brain, among them dopamine, which is associated with pleasure and reward seeking behaviour and is considered critical for the reinforcing effects (effects that promote self-administration) of nicotine (25). However, experimental animal data showed that exposure to nicotine not only stimulates but also temporarily desensitises the nicotinic receptors even after a relatively short period of exposure. Desensitization (unresponsiveness) of the nicotinic receptors is believed to play a role in the symptoms of craving and withdrawal experienced by smokers during periods of abstinence when these receptors become responsive again, and which are relieved by nicotine

binding to these receptors during smoking. Nicotine withdrawal causes anxiety and stress, both of which are powerful incentives for smokers to take up smoking again, thus sustaining sufficient level of plasma nicotine to prevent the withdrawal symptoms, while deriving rewarding effects from conditioned reinforcement associated with smoking (25).

It is hypothesised that smoking is probably reinforced primarily by conditioned stimuli (sensory cues) present in the smoke. Further evidence showed that in established smokers, non-nicotine aspects of cigarette smoking have powerful reinforcing effects making cigarette smoking particularly addictive (26). Thus tobacco smoking is a learned behaviour resulting in addiction to nicotine that reflects complex interactions between nicotine, and other stimuli associated with smoking, including those associated with inhalation of tobacco smoke, as well as environmental, social or behavioural cues that smokers associate with the rewarding effects of nicotine (22, 25, 26).

1.1.4 Health effects of tobacco use

Tobacco smoke contains more than 7,000 chemicals, including hundreds of toxicants and more than 70 carcinogens that cause damage to DNA (27, 28). Tobacco use is a common risk factor for all major non-communicable diseases such as cardiovascular disease,

cancer, chronic respiratory diseases and diabetes (3, 9, 13). and is also a major risk factor for tuberculosis (29) and lower respiratory infections (8, 30).

The first scientific evidence of the link between smoking and cancer was published by Wynder and Graham and Doll and Hill in the 1950s (31-33). The current evidence base shows that tobacco use causes at least 16 different types of cancer, including several cancers of the throat and oral cavity, as well as cancer in other sites, such as the bladder, kidney, stomach and uterine cervix (3). Lung cancer remains the most commonly diagnosed cancer worldwide with 13% of the total cancers diagnosed in 2012 or 1.8 million new lung cancer cases (34). It is estimated that smoking increases the risk of developing lung cancer by 25 times in men and by 25.7 times in women (35).

The chemicals in tobacco smoke can damage the lining of the lungs and reduce the ability of the lungs to function efficiently leading to chronic lung diseases such as chronic obstructive pulmonary disease (COPD), emphysema and chronic bronchitis (28).

Tobacco smoke damages the blood vessels and makes blood more likely to clot thus increasing the risk of heart attacks, stroke, and sudden death (28).

Exposure to second-hand smoke increases the risk of heart disease in non- smokers causing at least 600,000 deaths a year, with half of them occurring in adult women and over 25 % in children under the age of five (29).

Women smoking in pregnancy are at higher risk of miscarriage, premature birth, low birth weight, sudden infant death syndrome and developing diabetes in both mothers and infants later in life (29).

Smokers are also more likely to experience poorer mental health (3) as nicotine has been found to increase the risk of anxiety and depression (36, 37).

1.1.5 Cost of smoking

The harmful effects of smoking affect not only individuals but are also damaging for societies and economies. The economic costs of smoking include the direct costs of treatment and medication placed on the health care system, and the indirect costs include the costs of morbidity, mortality and disability through loss of productivity and reduced household income due to smoking-related disease (38).

Most studies on the economic cost of smoking have been conducted in the United States and other high income countries. It has been calculated that the annual healthcare costs attributable to smoking account for 6-15% of national healthcare costs in high-income countries (38, 39). In England tobacco cost to society is approximately £12.9 billion a year, which includes the cost to the National Health Service (NHS) of treating tobacco related diseases and lost productivity costs due to premature deaths, smoking breaks and absenteeism (40). In the US the costs of smoking were estimated to reach $170 billion annually by 2010 (39).

In low and middle income countries where the tobacco epidemic is in its early stages, the true costs of smoking are yet to be determined. Currently there is little documented evidence of tobacco attributable costs in developing countries where limited access to healthcare may underestimate the costs of tobacco on healthcare (38). It is expected that in developing countries such as China and India, as the quality of healthcare services and healthcare spending increase so will the tobacco attributable health care costs (38).

In addition to morbidity and mortality caused by tobacco use, low and middle income countries bear a large part of environmental and other economic costs of the tobacco epidemic (10, 13). Tobacco farming has an enormous impact on the environment through deforestation, extensive use of highly toxic pesticides and greenhouse gas emissions

from wood burning for tobacco curing. Approximately 200,000 ha of forest land are lost to tobacco crops every year, predominantly in low and middle income countries (13). An estimated 19,677 tonnes of firewood were burned for tobacco curing over one year in Pakistan alone, releasing 645 tonnes of carbon dioxide emissions in the atmosphere (41).

Tobacco farming also involves extensive use of highly toxic pesticides which are banned in developed countries but are still in use in many low and middle income countries with less stringent environmental laws (13, 17). Tobacco growing has a negative impact on food production in low and middle income countries through rapid loss of agricultural land resulting in undernourishment of populations in low income tobacco growing countries (17).

Tobacco consumption also leads to economic deprivation, with an estimated 10% of household income spent on tobacco in low income countries and up to 20% by a pack a day disadvantaged smoker in New York (13).

1.1.6 The benefits of tobacco cessation

Longitudinal studies have demonstrated the benefits of quitting in smokers related to mortality (42, 43). The findings from 50 year follow

up of the British doctors' study showed that lifetime smokers lose on average 10 years of life but cessation at age 50 reduce the risk by half and cessation before age 30 can avoid more than 90% of the smoking-attributable risk of lung cancer (42).

A prospective study of 1.3 million British women showed similar results. Two-thirds of all deaths among smokers in their 50s, 60s and 70s were caused by smoking, while stopping before age 40 avoids more than 90% of excess mortality and stopping before age 30 avoid over 97% of the increased risk (43). Giving up smoking even later in life can result in significant improvements in health and life expectancy. Quitting by age 40, 50, or 60 results on average in gaining 9, 6, and 3 years of life, respectively (42).

There are health benefits of quitting tobacco use at any age and tobacco smokers who stop significantly reduce their risk for tobacco related disease and premature death. Some of the health benefits from stopping smoking occur soon after quitting such as improvements in breathing and circulation, while for other functions to return to normal it takes months or years. The risk of heart attack drops by half within 1 to 2 years of quitting (44) and the risk of lung cancer is reduced by half of that of a continuing smoker after 10 years of stopping.

1.2 Tobacco dependence treatment

1.2.2 Evidence based tobacco dependence treatment guidelines

Development of evidence based tobacco dependence treatments guidelines is based on comprehensive reviews of evidence on efficacy and safety of different approaches. The first evidence based tobacco treatment guidelines were published in the US and the UK in the 1990s. The original US guidelines published in 1996 were based on 3,000 research articles on tobacco treatment published between 1975 and 1994, and the subsequently updated versions, published in 2000 and 2008, reviewed evidence from another 5,700 articles (45, 46). The UK tobacco dependence treatment guidelines were based on the Cochrane Tobacco Addiction Group systematic reviews evidence base and also included evidence of cost –effectiveness of tobacco dependence treatment (47). In 1998 the UK government published the White paper ‘Smoking Kills’ which contained a comprehensive strategy to reduce smoking prevalence, and a proposal to establish the first smoking cessation service as part of the National Health Service (48).

The WHO Europe tobacco treatment recommendations developed in 2002 define tobacco treatment as follows: 'Tobacco dependence treatment includes (singly or in combination) behavioural and pharmacological interventions such as brief advice and counselling, intensive support, and administration of pharmaceuticals, that contribute

to reducing or overcoming tobacco dependence in individuals and in the population as a whole (49).

1.2.3 Tobacco dependence treatment approaches

Tobacco dependence treatments, or tobacco cessation support, broadly cover two approaches – counselling, or behavioural support, and cessation medications, which can be used in combination or independently. Evidence showed that a combined treatment approach is more effective because they assist smokers to stop using tobacco in different ways. While pharmacotherapy eases the nicotine withdrawal symptoms, behavioral support enhances the smoker motivation and confidence and teaches practical problem-solving skills to prevent relapse. Tobacco dependence clinical guidelines recommend that both behavioural and pharmacotherapy approaches should be used for treating tobacco dependence (46, 47, 49-51).

1.2.3.1 Behavioural support

Behavioural support approaches for smoking cessation are generally based on aspects of behaviour change theories and models, particularly the Transtheoretical Model (the Stages of Change Model), developed by Prochaska and DiClemente in the late 1970s (52), and the more recently developed PRIME theory and the SNAP model by West and colleagues (53).

While the Transtheoretical model posited that stopping smoking required progression through a series of ‘stages of change’: Precontemplation (not intending to stop within the next 6 months), Contemplation (intending to stop within the next 6 months), Preparation (ready to take action within the next 30 day), Action (making a quit attempt), Relapse prevention (trying to prevent smoking relapse), Maintenance (stopped for at least 6 months). Although the Stages of Change model has been useful in developing behavioural strategies applicable to various stages of change, for example reinforcing healthy behaviour through rewards, it has been criticized for its limitations. For example, it does not offer a clear set of criteria to determine each stage and its duration and assumes a coherent and logical decision making process in achieving a behavioural change. Other limitations include suggesting that different interventions are required for those at different stages of change, offering cessation support only to smokers who intend to quit, and failing to explain quit attempts made without pre-contemplation (53).

By contrast, the SNAP model based on PRIME theory which views motivation as exercise of self-control and the role of self and identity in creating rules that generate motives, suggests that smokers can change at any moment from ‘smoking with no plans to stop’, to having a rule of ‘not smoking’, a rule of ‘attempting to stop’, or to ‘planning to stop’ (53). One important implication of the SNAP model is that all

smokers should be encouraged and supported to quit by generating a quit attempt and preventing relapse.

Michie and colleagues identified two types of evidence based behavioural change techniques (BCT): techniques that address motivation (maximising motivation to abstain or minimising motivation to smoke), and techniques that focus on maximising self-regulatory capacity and skills to help relapse prevention (e.g. reducing exposure to smoking cues, advising on goal setting, problem solving) (54, 55). Other components of individual behavioural support include providing information, advising on stop-smoking medication and activities that promote abstinence as well as the general aspects of interaction underpinning the delivery of behavioural support (e.g. building rapport, providing reassurance) (55).

Effective individual support BCT that have been associated with a high success rate of quitting in the context of the English Stop Smoking Services include: strengthening ex-smoker's identity, eliciting client views, measuring CO, giving options for additional and later support, providing rewards contingent on abstinence, advising on changing routines, relapse prevention, and stop smoking medication (54). Group-based behaviour change support that has been shown to be effective in the context of RCTs include encouraging group discussions, group interaction, mutual support (55).

A variety of smoking cessation behavioural support interventions have been developed targeting smokers' motivation not to smoke and advising on practical ways of avoiding, escaping from or minimising urges to smoke. Behavioural interventions range from brief advice offered by a physician or other health-care worker, to individually or group delivered smoking cessation counseling with different intensity delivered face- to-face or through telephone counselling by a trained counsellors or at specialised smoking-cessation clinics. Behavioral support can also be web based, mobile phone based, or may include printed self-help resources.

Brief advice

Brief smoking cessation interventions in primary care are recommended in smoking cessation clinical guidance for health professionals in the US, the UK and other countries (46, 49, 50). Brief advice given by a clinician or other health care professional is usually based on the 5As approach (assessing the patient's smoking status, advising to stop; assisting those interested in stopping by recommending NRT or other medication and providing information how to use it, or making a referral to a specialised smoking cessation service; arranging a follow up) (56).

Evidence from RCTs suggests that offering assistance is the key component of a brief smoking cessation intervention as it triggers a quit

attempt regardless of smokers' willingness to quit smoking (57). Brief opportunistic interventions that include advising and offering assistance to all smokers are recommended for primary and secondary health care staff in the UK (an approach known as 3As (Ask, Advise, Act) (58).

Based on evidence from RCTs, brief advice (approximately five minutes) given by a physician to smokers attending a consultation for a medical condition, increases abstinence rates at six to 12 months by an average of 2% compared to no intervention (59). It is estimated that if brief advice is applied universally across the whole health care system it could result in thousands of ex-smokers yearly at a very low cost (47, 59).

Very brief advice

England's National Institute for Health and Care Excellence (NICE) Smoking Cessation Interventions and Services Recommendations published in 2017 highlight the need for checking smoking status and signposting smokers to more support at every opportunity (defined as very brief advice that lasts less than 30 seconds). It is recommended that very brief advice should be given by all clinical and public health professionals as part of a routine daily practice (60). Currently, there is no published evidence on implementation and effectiveness of very brief advice.

Individual behavioural counselling

Individual behavioural counselling or support usually involves face-to-face advice, discussion and encouragement aimed at increasing motivation to remain abstinent, minimize motivation to smoke, skills and strategies to resist urges to smoke, and advice on effective use of cessation medication where available. It is typically provided by a trained smoking cessation counsellor over a period from one to more than four weeks (57) but usually involves between 4 and 8 contact sessions lasting at least ten minutes (59). Individual counselling without pharmacotherapy can increase the chance of quitting by between 40% and 80% (61), and compared to brief advice it can double the abstinence rates at six to 12 months to 4% (59).

Group behavioural counselling

Group counselling typically includes scheduled meetings and some form of behavioural intervention, such as information, advice and encouragement or cognitive behavioural therapy (CBT) delivered over at least two sessions. Evidence suggests that group therapy is more beneficial than self-help for helping people stop smoking, however there is not enough evidence to evaluate its effectiveness and cost-effectiveness compared to individual counselling or the use of any

particular psychological intervention beyond the support and skills training normally included in behavioural counselling (62).

More intensive behavioural support combined with pharmacotherapy

More intensive behavioral support is typically delivered by a smoking cessation specialist over a period of time, and usually involves the use of NRT and/or other medications. It is typically provided by a trained smoking cessation counsellor over a period from one to more than four weeks (59) but usually involves between four and eight contact sessions lasting at least ten minutes (61). Such support can be offered individually or in groups and include training in coping skills, social support and the use or recommendation of the use of NRT or other medication as appropriate, along with clear instructions how to use.

Evidence from randomized or quasi-randomized controlled trials has shown that combinations of intensive behavioural support and pharmacotherapy increases the chances of successfully quitting by 70 to 100 percent compared to just brief advice or less intensive behavioural support (63). Current evidence also suggests that offering more intensive behavioural support when combine with pharmacotherapy is not associated with larger treatment effects (63).

Tobacco dependence treatment guidelines recommend that intensive tobacco treatment should be offered to heavy and long term smokers who cannot quit with less intensive support (46, 49). Observational and trial data from England's NHS Stop smoking services suggest that more intensive smoking cessation interventions result in 53% quit rates at four weeks and 15% at 1 year (64).

Telephone counselling (quitlines)

Quitlines are telephone-based counselling to help tobacco users quit. Quitlines emerged in the 1990s and have been used in North America, Europe, Australia, and parts of Asia (65) and are effective in reaching a large number of smokers. Quitlines can have a different format and offer different services. Quitlines may be reactive (when tobacco users make the first contact), or proactive when counsellors contact smokers that have been identified and referred by health care providers), and may provide services such as self-help materials, recorded messages, multiple counselling sessions, medication, referral, or a combination of these services (66). Counselling sessions can be either proactive (the quitline proactively calls the smoker back for follow-up sessions) or reactive (the smoker has to initiate calls including any follow-up calls).

Trial data comparing effectiveness of telephone behavioural support with other interventions suggest that proactive quitlines with counsellors

calling back increase the chances of quitting in smokers seeking help to quit by 37% or an increase of approximately 3% in six to 12 months abstinence compared to a minimal intervention such as standard self-help materials, brief advice, or pharmacotherapy alone (59, 67).

Quitlines are a cost-effective and efficient way to reach a large number of tobacco users in the population. Evidence suggests that proactive counseling, in particular, can more than double a smoker's chances of quitting and quitline counselling combined with medication, such as nicotine replacement therapy, can more than triple the chances of quitting (46, 68).

Mobile phone based smoking cessation interventions

Smoking cessation interventions based on mobile technology and applications are relatively new. Similar to quitlines, mobile phone based interventions can reach a large number of tobacco users at a relatively low cost. Text messaging based interventions usually use automated text messages or personalised cessation advice to provide motivation, support and quitting tips. The use of mobile technology also allows for multiple contacts to be made several times a day or for longer periods of time thus increasing the intensity and the potential for adapting and personalisation of the interventions (69). Text messaging based interventions in particular were found to be highly cost-effective

compared to other smoking cessation interventions such as intensive counselling and telephone counselling (70). A meta-analysis of the effectiveness of mobile based interventions based predominantly on studies of text messaging interventions, showed that these interventions increased the chances of quitting at 6 months by 71% or an increase of 4% in six to 12 month abstinence (59, 71).

Computer and other electronic based smoking cessation interventions

A systematic review of trial data on smoking cessation programmes using computer, internet, mobile telephone or other electronic devices shows that compared to generic self-help materials these interventions increase the chances of cessation by approximately 32% and are likely to be cost-effective with smokers who are actively trying to quit (72).

Self-help materials

Self-help materials may include printed materials (leaflets, booklets, books) designed to provide advice, information and support to help smokers stop smoking. Standard, print-based self-help materials increase quit rates compared to no intervention by 2% after at least six months, or one additional successful quitter compared with no other support (59, 73). While there is also some evidence that individually

tailored self-help materials are more effective than non-tailored materials, there is no additional benefit of self-help materials in addition to brief face-to-face advice from a healthcare professional or nicotine replacement therapy. However, self-help materials can be used in a wide range of setting and are affordable in all countries (59).

1.2.3.2 Pharmacotherapy

Pharmacotherapy are medications that help tobacco users to stay abstinent of quit by reducing their nicotine cravings and/or stopping nicotine from stimulating the receptors in the brain associated with nicotine induced pleasure.

Nicotine replacement therapy

Medicinal nicotine is used in the form of nicotine replacement therapy (NRT) to help tobacco users quit. NRT was first developed in the 1970s and NRT products are widely available on prescription or over-the-counter in many countries. NRT products are designed to reduce the tobacco withdrawal symptoms that smokers experience when they stop smoking. NRT include a range of products (nicotine patches, gum, lozenges, mouth spray, inhalator and nasal spray) that deliver a lower dosage of nicotine and more slowly compared to smoking, usually taken for eight to 12 weeks. All forms of NRT increase the likelihood of quitting by 50 to 70% (74) and can increase continuous abstinence

rates at six to 12 months by 6% compared with placebo (59). Combined NRT is shown to be more effective in helping heavy smokers to quit (74). A meta-analysis comparing the effectiveness of different pharmacological interventions found that NRT patch, gum, and inhalers, sprays, tablets and lozenges) were equally effective, while a combined NRT was more effective than a single NRT product (75).

The use of NRT in pregnancy has been found to be associated with fewer risks, for example pregnant women who used nicotine patches had babies with significantly less adverse outcomes compared to those that used placebo patch, and therefore can be used as a risk reduction strategy (76). NRT is also recommended for cessation in smokers with cardiovascular disease and adolescent smokers (46, 77). Use of licensed NRT products is recommended as a harm reduction strategy, to help cutting down prior to quitting, reducing smoking, or for temporary abstinence (78).

Bupropion (Zyban)

Bupropion is an antidepressant proven to be effective as a tobacco cessation drug and has been licensed as a tobacco cessation medication available on prescription in Europe, the USA, Canada, New Zealand and other countries (75).

As an antidepressant bupropion acts as a dual norepinephrine and dopamine reuptake inhibitor. By inhibiting dopamine reuptake, bupropion helps maintaining the dopamine levels in the brain thus relieving the nicotine cravings and withdrawal symptoms, which makes it an effective smoking cessation aid (79).

The standard dose for smoking cessation is 150 mg once a day for three days increasing to 150 mg twice a day for seven to 12 weeks (75). A quit attempt is usually initiated a week after starting the medication (75). Bupropion increases the chance of quitting by around 80%. Meta-analysis data has shown that bupropion is equally effective as a single form of NRT but less effective than varenicline. (75).

Varenicline (Champix)

Varenicline has been licensed as a prescription drug for smoking cessation in the USA and Europe since 2006 and is also available in other countries.

Varenicline is a partial nicotinic acetylcholine receptor agonist triggering dopamine release in the brain, thus diminishing nicotine craving and withdrawal symptoms, while at the same time acts as an antagonist

preventing nicotine from binding, thus reducing the rewarding effect of smoking (80-82).

The standard dose is 1mg twice a day for 12 weeks, adjusted during the first week to reduce side effects, and quit date set for the second week (75). Varenicline is 50 percent more effective than nicotine patch, 70 percent more effective than nicotine gum, and 40 percent more effective than other NRT e.g. inhaler, spray, lozenges, but is not more effective than combined NRT (75). Varenicline has proven effective for treating tobacco dependence in smokeless tobacco users in Scandinavia (83) and India (84). A systematic review of evidence suggests that face-to-face behavioural support and varenicline can promote smokeless tobacco cessation (59).

Cytisine (Tabex)

Cytisine is a plant based drug pharmacologically similar to varenicline, a a partial agonist with a high affinity to the nicotinic acetylcholine receptor. Although its potential as a cessation drug was tested in the 1970s in Bulgaria (85), its efficacy as a cessation medication was confirmed almost four decades later (86, 87). Meta-analysis data have shown that cytisine can improve the chances of quitting four times without causing any serious adverse health effects (75). The standard

regimen is a 25-day course, gradually reducing from six 1.5 mg tablets a day to two tablets a day by the end of the treatment period, with a quit date set for day five. Cytisine has been found to increase six to 12 month continuous abstinence rates by 6% compared with placebo (59).

Cytisine is an effective low cost smoking cessation drug (87) and has been recommended as one of the most effective and affordable interventions to promote and assist tobacco cessation globally (59) Currently the drug is licensed for use as a cessation medication only in a limited number of countries in Eastern Europe (75).

Nortriptyline

Nortriptyline is an antidepressant drug licensed as a smoking cessation aid in New Zealand. The recommended course of treatment is a period of titration (10 - 28 days) before a quit attempt is made, and a 12-week therapeutic dose of 75 to 100 mg daily (75). Meta-analyses data have shown that nortriptyline increases the chances of quitting twice compared to placebo (75) and increase six month continuous abstinence rates by ten percent (59). Nortriptyline is on a par with cytisine in terms of affordability and has been recommended as a globally affordable cessation intervention (59).

Other medications

Drugs such as mecamylamine and clonidine originally used to lower blood pressure were found to either block the effects of nicotine or reduce the withdrawal symptoms of nicotine dependence. Due to the high doses of mecamylamine needed to improve its efficacy which is associated with significant side effects, its potential use for tobacco cessation is limited (88). Also, there is a lack of clear evidence whether its efficacy improves if used in combination with NRT (75).

Clonidine is licensed for the treatment of hypertension but also reduces the symptoms of nicotine withdrawal and is listed as a second-line treatment for smoking cessation in the United States (88). Its use as a smoking cessation drug requires close medical supervision due to its significant symptoms of sedation and postural hypotension (75).

Meta-analysis of the effects of anxiolytics for tobacco cessation has shown significant side effects such as risks of dependence and sedation. The uncertain efficacy and side effects of these drugs prevent from being used as safe smoking cessation aids (75).

Nicotine containing electronic devices

Electronic cigarettes or e-cigarettes (EC) are electronic devices that deliver nicotine by heating and vaporising a solution that typically contains nicotine, propylene glycol and/or glycerol, and flavourings (89).

Evidence from randomised control trials and longitudinal studies showed that that nicotine containing EC helped smokers reduce the amount they smoked by at least half compared to those using an EC without nicotine, prevent relapse in ex-tobacco smokers and can be used as a cessation aid by current smokers (89-91). A prospective cohort study on the safety and efficacy of the e-cigarettes reported that e-smokers were nearly three times more likely to be abstinent at a 12 month follow up compared to tobacco smokers and dual smokers and there were no increase in adverse events (92). A cross-sectional population study of smokers trying to quit without behavioural support found that those who used e-cigarettes were 60% more likely to maintain abstinence than those who used licensed NRT bought over the counter (93). Although evidence on the effectiveness of EC as a cessation aid to help smokers quit long term is still limited (94), an estimated 2.1 million smokers in the UK, most of them current smokers and one-third ex-smokers, used EC for harm reduction or as a quitting aid in 2014 (95). Global survey data showed a lower prevalence of use of EC in other countries (less than five percent) but a growing awareness of these devices (96). According to WHO survey data, nicotine containing EC are either not regulated or regulated as a tobacco or consumer product in a majority of countries, and in a

minority of countries EC are banned or regulated as a therapeutic product (97).

Since EC either don't contain many of the harmful chemicals contained in tobacco smoke or if they do these are a much-reduced levels they may be used as a harm reduction alternative to smoking or as a smoking cessation aid (98). A recent review of evidence commissioned by England's public health authority suggest that EC are a much safer alternative to smoking and should be recommended as a smoking cessation aid and in harm reduction (99). The use of EC is opposed by some experts on the grounds of potential health risks and concerns that EC might re-normalise smoking of conventional cigarettes especially among young people, serving as a gateway to smoking (100). However, the risk posed by the low levels of toxic chemicals and carcinogens found in EC liquid and vapour is much smaller compared to the risks of inhaling combustible cigarette smoke and currently there is no evidence to suggest that EC are a gateway to smoking (98, 99).

The regulatory landscape of nicotine containing electronic devices varies. In Europe, regulation of EC comes under the new Tobacco Products Directive (TPD) which entered into force in 2016 and requires Member States to align their national legislation accordingly and regulate EC containing up to 20mg/ml as tobacco products, and above that level as medicinal products (95). Tobacco addiction experts warn against a regulatory framework that would place an emphasis on

extremely small risks of EC relative to tobacco cigarettes at the expense of potentially huge public health benefits from using these devices as a much safer alternative to smoking and as effective smoking cessation aids (99).

1.2.3.3 Alternative cessation methods

Alternative methods such as hypnotherapy and acupuncture are used to help smokers quit. Although some smokers may find these methods helpful there is not enough evidence to confirm that hypnotherapy is as effective as counseling for cessation (101). Currently the scientific evidence of the effectiveness of acupuncture, acupressure, laser therapy or electro-stimulation as cessation therapies is inconclusive (102).

1.2.3.4 Efficacy, effectiveness and cost-effectiveness of tobacco dependence treatment strategies

Incorporating smoking cessation interventions into a country's national health care system requires evidence on their effectiveness and cost-effectiveness. While randomised controlled trial data provide evidence on the efficacy of smoking cessation interventions (usually measured as an increase in abstinence rates against a placebo group under the controlled trial conditions), the effectiveness of these treatments may differ when used in real life settings. Observational data on abstinence

rates in tobacco users using different tobacco cessation aids showed that a combination of prescription medication (i.e. NRT, bupropion, or varenicline) with specialist behavioural support is the most effective method of quitting followed by prescription medication combined with brief advice (103). It also showed that NRT bought over the counter was associated with lower odds of abstinence suggesting that smoking cessation which involves NRT bought over the counter is less effective compared to NRT efficacy shown in trials. Such discrepancy can be explained by low compliance or inappropriate dosage in real life scenarios which are important factors to consider when evaluating the effectiveness of treatments. Another important aspect is the cost-effectiveness of the smoking cessation interventions. An evaluation of affordability of smoking cessation interventions (the cost of saving a life-year compared to the per-capita Gross Domestic Product (GDP) in countries with different income level as per the World Bank (WB) income classification) showed that brief advice from a health-care worker, proactive telephone support, automated text messaging, printed self-help materials, cytisine and nortriptyline are globally affordable health-care interventions to promote and assist smoking cessation (59). Brief advice or multi-session face-to-face behavioural support with pharmacotherapy is effective and affordable smoking cessation intervention in middle and high-income countries (59). Cost-effectiveness evaluation of Internet and other electronic based interventions indicate that electronic interventions can be cost-effective

when delivered alongside behavioural support such as brief advice or more intensive counselling (72).

1.2.4 Assisted versus unassisted tobacco cessation

Ensuring cessation support and treatment for tobacco users is an important policy measure globally since more countries are implementing tobacco control measures such as price and tax increases and smoking restrictions which also increase the demand for cessation support. Nicotine is a highly addictive drug and tobacco users need help in quitting. Access to treatment and medication for tobacco dependence therefore should be available in a similar way as treating other medical conditions.

According to recent Global Adult Tobacco Survey (GATS) data from 22 countries the majority of current smokers reported an intention to quit (104). Self-reported intention to quit ranged from 42% among male current smokers in China and Egypt to more than 70% in Argentina, Malaysia, Mexico, and Uruguay. Among women, quitting intention ranged from 34% in China to 83% in Malaysia (104).

Survey data from the US show that between 2001 and 2010 more than half of current smokers made a quit attempt (105), however figures

show low percentage of successful quit attempts (103, 105-107). Other survey data show that for most smokers it takes several quit attempts before successful quitting (106). Although stopping without assistance is possible, unassisted cessation is four times less effective than stopping with cessation support (103, 108).

Tobacco dependence treatments help users to achieve tobacco cessation earlier which is important as the risk of disease is linked to the duration of tobacco use. The benefits of tobacco dependence treatment compared to no treatment at individual and population level are shown in the prevention and treatment effect diagram by Henningfield's (109) (Figure 1); if tobacco control efforts are limited to preventing younger generations from tobacco use without treating the current tobacco users there will be millions of deaths among the current tobacco users before the benefits of no-smoking generations are realised; if tobacco dependence treatment is an integral part of tobacco control, the benefits from cessation will be realised much earlier and on a much bigger scale. Tobacco cessation and treatments also maximise the impact of other tobacco control policy measures (110). At policy level, promoting tobacco cessation and making tobacco dependence treatments available results in huge public health gains.

Offering tobacco users treatment and cessation support is also a moral imperative as in many countries tobacco users represent lower socio-economic groups and are more likely to be further disadvantaged by tobacco control strategies such as increased taxation (108).

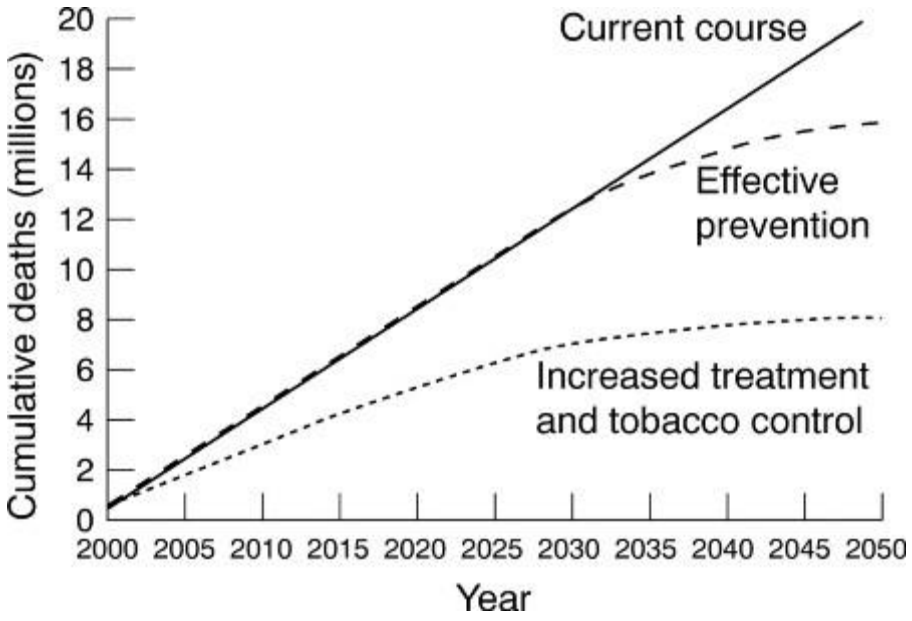


Figure 1.1 Projections of smoking caused mortality with and without treatment of current smokers (Source: Henningfield, Tobacco Control 2000; 9 (Suppl I):i3–i10)

1.3 Tobacco dependence treatment and tobacco control

1.3.1 The origins of tobacco control

The use of tobacco by humankind for religious, recreational and medicinal purposes has a millennium long history (111). Despite that the harmful effects of tobacco had been known for centuries and various attempts to discourage or ban its use had been made (111) it was not until the second half of the twentieth century when the first anti-tobacco policy measures were introduced.

The medical profession and non-governmental civil society organizations had a leading role in this lengthy process which eventually shaped a new area of public health policy and research called tobacco control. The aims of tobacco control are to reduce tobacco use in populations and the morbidity and mortality caused by it.

Using evidence from Doll and Hill's epidemiological study of the relationship between smoking and lung cancer, and the British doctors' cohort study (31, 33), the Royal College of Physicians of London (RCP) published the first Report on Smoking and Health in 1962 (112), which in effect was the first tobacco control policy document.

The RCP Report made a strong case for smoking as a preventable cause of lung cancer and other diseases and called for public health policy action by the government. Among the public health measures suggested in the Report were: anti-smoking education, restriction of tobacco advertising, and smoking in public places, increasing taxation on cigarettes, and anti-smoking clinics (112). The Report also called for doctors to inform and advise patients on the health hazards of smoking and to help them quit.

Copies of the UK RCP Report were available to buy by the public and this was the first example of using research evidence by medical professionals to appeal directly to the public to change their behaviour for health reasons. More than 33,000 copies of the RCP Report were sold in the UK and more than 50,000 copies were sold in the United States (113). The RCP Report prompted the Kennedy administration to commission a comprehensive review of evidence on the smoking question (114). In 1964 the Surgeon General (SG) of the US published its first Report on Smoking and Health (115) corroborating the evidence and conclusions of the RCP Report. These developments made health risks of smoking common knowledge and led to the first anti-smoking legislation to be introduced in 1965: health warnings on cigarette packages in the US (114) and a ban on cigarette advertising on television in the UK under powers granted by the 1964 Television Act (111).

1.3.1.1 Towards an international legal approach to tobacco control

The idea of an international legal framework and a legal approach to tobacco control was proposed by Ruth Roemer in 1993 (116) after reading Allyn L. Taylor's paper published in the American Journal of Law and Medicine where she advocated that the WHO should utilize its

constitutional power to promote the development and implementation of an international law to advance global public health. Roemer and Taylor's proposal of an international regulatory instrument to curb the global tobacco epidemic were met with substantial resistance by the WHO officials. Despite a strong political opposition the WHO Executive Board adopted a resolution for the development of a framework convention on tobacco control in 1996. It was not until 1998 when efforts to implement the resolution were made.

1.3.1.2 The role of non-governmental organisations in tobacco control

Civil society organisations and coalitions around the world were to become the main driver in the global tobacco control movement. Action on Smoking and Health (ASH) established by the Royal College of Physicians in the UK in 1971 was one of the first anti-tobacco advocacy organisations (117) and played a key role in propelling government to act following the publication of the RCP Report on smoking and health (118). ASH UK remains the most influential anti-tobacco campaigning and advocacy non-governmental organization which currently provides a secretariat for the UK's All Party Parliamentary Group on Smoking and Health (117).

Anti-tobacco civil society groups, organisations and coalitions around the world mobilised by ASH UK (119), had a major impact on the inter-government negotiations of the WHO Framework Convention on Tobacco Control (FCTC) between 1999 and 2003, in their capacity of a non-state partner (119, 120). The treaty negotiations provided an impetus for consolidation of tobacco control efforts of civil society groups and organisations, giving rise to the Framework Convention Alliance (FCA), a global anti-tobacco advocacy network of non-governmental organisations from around the world (120). The involvement of FCA and other civil society organisations in tobacco control helped to reframe the debate and debunk the traditional arguments made by the tobacco industry on the economic benefits of tobacco and the attempts of tobacco companies to divide developing and developed countries by claiming that tobacco control was' the first world' concern (119). Despite pressure by civil society groups, the final text of the FCTC (121) did not include an explicit provision on the priority of public health over trade. Nevertheless the adoption of the FCTC by a vast majority of the WHO member states despite the strong opposition by some countries (119) was a victory for the FCA and the global tobacco control movement.

The FCA continued its work to ensure that the provisions of the FCTC are implemented. The FCA acts as a watchdog, monitoring progress made by countries in implementation of the Convention at national and

regional level. In September 2017 the FCA has nearly 500 member organisations from over 100 countries (122).

1.3.2 The Framework Convention on Tobacco Control

The World Health Organization (WHO) Framework Convention on Tobacco Control (FCTC) (121) is the first and so far the only international treaty negotiated under the auspices of the WHO (120) and the first global evidence-based public health treaty that addresses both demand and supply reduction strategies in tackling the global tobacco epidemic (121). The Convention was adopted by the WHO member states in 2003, after four years of negotiations, and formally entered into force in February 2005 (116, 120).

The FCTC Article 4 states that its objective is ‘to protect present and future generations from the devastating health, social, environmental and economic consequences of tobacco consumption and exposure to tobacco smoke by providing a framework for tobacco control measures to be implemented by the Parties at the national, regional and international levels in order to reduce continually and substantially the prevalence of tobacco use and exposure to tobacco smoke. The underlying principles of the Convention, inter alia, are political

commitment, international cooperation and the civil society participation in achieving its objectives (121).

The core demand reduction measures are contained in Articles 6 – 14.

- Price and tax measures to reduce the demand for tobacco (Article 6)
- Non-price measures to reduce the demand for tobacco (Article 7)
- Protection from exposure to tobacco smoke (Article 8)
- Regulation of the contents of tobacco products (Article 9)
- Regulation of tobacco product disclosures (Article 10)
- Packaging and labelling of tobacco products (Article 11)
- Education, communication, training and public awareness (Article 12)
- Tobacco advertising, promotion and sponsorship (Article 13)
- Demand reduction measures concerning tobacco dependence and cessation (Article 14)

The core supply reduction measures are contained in Articles 15-17:

- Illicit trade in tobacco products (Article 15)
- Sales to and by minors (Article 16)
- Provision of support for economically viable alternative activities (Article 17)

In addition, Articles 20-22 of the Treaty set out mechanisms for scientific and technical cooperation and exchange of information among Parties.

Signatories and Parties

The WHO FCTC was opened for signature from 16 to 22 June in 2003, by the end of June 2004 had 168 Signatories, including the EU. However, some Signatories, including the USA, have not proceeded to full ratification of the FCTC, which means that they have not become Parties. To date there are 181 Parties to the Convention, 180 Member States, and the EU, covering nearly 90 % of the world's population.

Conference of the Parties

The Conference of the Parties (COP), is the FCTC governing body (123). The COP permanent secretariat (the Convention Secretariat) is hosted by the WHO in Geneva and COP sessions are held biennially.

1.3.3 Effects of tobacco control policies on tobacco cessation

The ultimate goal of tobacco control is to reduce tobacco consumption to the lowest possible level of prevalence. Evidence from high income countries indicates that implementation of comprehensive tobacco

control policies can both reduce prevalence of tobacco use and increase tobacco cessation rates in the population (124). In 2008 the WHO introduced the MPOWER policy package to reverse the global tobacco epidemic (4). MPOWER includes six measures as part of a comprehensive tobacco control, including raising taxes on tobacco products, bans on advertising of tobacco products, health warnings, smoke-free laws, mass media campaigns, and access to treatment. Different tobacco control measures have different effects on cessation of tobacco use. Tobacco policy measures that can help promote and increase tobacco cessation in the population are summarised below.

1.3.3.1 Raising tobacco prices and taxes

Evidence from different countries shows that price increases through taxation is one of the most effective tobacco control measure in reducing the demand for tobacco products; it is estimated that a price increase of 10% results in a decrease of 2.5% to 5% in cigarette consumption in high income countries, and the price elasticity (the amount of decrease in demand in response to an increase in price) could be bigger in lower income countries (125, 126). Raising prices on tobacco products has proven to be effective in changing smoking behaviour among younger smokers, women and smokers from low socio-economic groups (126, 127). Price and tax measures are particularly effective in the longer term. In countries such as the UK, Canada and South Africa where cigarette prices have been rising

steadily over time there has been a steady fall in consumption (110, 126). Following a rapid increase in cigarette retail prices in the 90s, smoking prevalence in the UK decreased from 30% to 27% in the first half of the decade, and continued to fall after further tax increases were introduced, to 21% in 2007 (110).

Price increase of tobacco products while proven effective in reducing smoking in certain groups does not seem to have the same effects on heavy and long term smokers, people with dual diagnosed (mental illness and another condition), and aboriginal people (127).

1.3.3.2 Mass media campaigns promoting cessation

Mass media channels such as television, radio, printed materials and the Internet have been used to communicate the health risks of tobacco to the public. Mass media campaigns promoting tobacco cessation have been shown to be effective in triggering quit attempts. In the UK a national mass media campaign in October 2013, ‘Stoptober’, generated an estimated 350,000 additional quit attempts (128). Smoking cessation media campaigns appear less effective in generating quit attempts in socio-economically disadvantaged smokers (129).

1.3.3.3 Smoke-free laws and restrictions on smoking in public places

While smoke free legislation is generally aimed at protecting non-smokers to exposure of tobacco smoke, evidence shows that smoking restrictions also increase quit attempts and cessation (130).

The effects of tobacco control policies on quit behaviours are not easily comparable as different studies focus on the effects in different groups which accounts for differences in the findings (127). Another reason for not being possible to estimate the exact effect of an individual policy is that often there are several policies in place at the same time. The combined effects of policies on cessation is less well studied although there is evidence that price and tax policies are more effective when applied synergistically with other policies. For example, the drop in smoking prevalence achieved in the UK since 2001 could not solely be attributed to cigarette price and tax increase but also to initiatives like stop smoking services, mass media campaigns and smoking bans in workplaces, pubs and restaurants (110).

1.3.3.4 Access to tobacco dependence treatment

Even with implementation of tobacco control strategies that have been shown to increase quit rates such as increases in tobacco products prices, restricting places where people can smoke, and educating smokers about the harms of tobacco, most tobacco users are dependent on nicotine and many will have difficulty stopping tobacco use.

It is estimated that success rate of quitting is around 5 - 6% (105, 131) and smokers trying to quit without assistance are four times less likely to succeed (108). Of daily smokers who try to quit unaided, 90–95% will relapse (4). Promoting cessation in all health care and community settings and offering tobacco users assistance in quitting is therefore essential. Making tobacco dependence treatment available is primarily the responsibility of a country's healthcare system, including government as well as NGOs and private clinical services. Tobacco cessation services can be subsidised by governments using revenues from tobacco taxation. Clinical tobacco cessation interventions focus on individuals, hence they are less cost effective in reducing overall tobacco use than population level strategies. Nevertheless, cessation interventions are important as they help individual tobacco users quit thus protect their health and lives. In addition, tobacco cessation interventions targeting individual tobacco users can provide a greater impact on health and are much more cost effective than most other healthcare interventions (4).

There are two types of clinical interventions to assist tobacco users to quit tobacco use: non-pharmacological interventions such as brief advice from physicians or other healthcare workers incorporated into routine medical care as well as counseling face-to-face or over the phone via quit lines or community programmes. The second type of

interventions include access to low-cost pharmacological therapy such as NRT (4).

1.3.4 FCTC Article 14 and the Article 14 guidelines recommendations

Tobacco cessation and tobacco dependence treatment is one of the demand reduction measures of the WHO FCTC. The WHO FCTC Article 14 and the Article 14 guidelines require each Party to the Convention to develop and disseminate 'appropriate, comprehensive and integrated' evidence based guidelines and to implement effective measures to promote tobacco cessation and tobacco dependence treatment (121, 132).

Tobacco cessation infrastructure

The Article 14 guidelines adopted at COP4 in 2010 (133) specify that Parties should strengthen or create the necessary infrastructure to effectively promote the cessation of tobacco use and provide tobacco users with adequate tobacco dependence treatments.

A national cessation support infrastructure includes the following components (132):

- a national co-ordination mechanism or a focal point
- a national cessation strategy for implementation of programmes and policies
- national evidence based treatment guidelines
- include specific programmes promoting cessation and offering tobacco dependence treatment to health care workers and others involved in cessation
- building training capacity and national training standards
- making the recording of tobacco use in all medical notes mandatory

Tobacco cessation support systems

The Article 14 guidelines recommend a range of tobacco cessation and treatment measures targeted at population or individual level (132), including:

Tobacco cessation measures at population level

- mass media campaigns promoting cessation

- educational programmes
- brief advice delivered by health care workers or providers outside the healthcare system
- quitlines
- access to medications

Tobacco cessation measures at individual level

- specialist support that includes behavioural support with or without cessation medication, delivered by a trained cessation specialist
- a network of specialised tobacco dependence treatment services within the national health care systems

The Article 14 guidelines stressed that tobacco treatment services should as far as possible use the existing infrastructure and Parties should identify a sustainable source of funding for cessation. The guidelines also recommend that specialist cessation services and medications should be available to tobacco users willing to quit for free, where possible, or at an affordable cost (132).

The guidelines suggest a stepwise approach in implementing the Article 14 provisions: first establishing the infrastructure components including addressing tobacco use in health care workers, building up training capacity and integrating brief advice within the existing health care systems, and finally establishing tobacco dependence treatment services. The guidelines recommend that Parties should monitor and evaluate their tobacco cessation and treatment strategies and programmes in order to assess trends.

1.3.5 FCTC implementation and monitoring

1.3.5.1 FCTC implementation guidelines

The WHO FCTC implementation guidelines are policy documents adopted by the COP that elaborate on the provisions of FCTC substantive articles and provide recommendations for practical steps that Parties should take to meet their treaty obligations. The implementation guidelines are based on the best available scientific evidence and best practice, and developed through broad consensus by intergovernmental working groups and input from non-governmental organisations and invited experts. Implementation guidelines covering the provisions of eight substantive articles have been adopted so far by the COP, including FCTC Article 14 guidelines.

The FCTC implementation guidelines are not being fully utilized in the monitoring process. The FCTC implementation measures recommended in the guidelines are not included in the “core questions” of Parties’ implementation reports, mandatory for all, but as “additional questions”, which are optional (134, 135). Parties therefore may not report on the measures recommended in the guidelines.

1.3.5.2 Monitoring tools

Parties’ implementation reports

FCTC Article 21 (121) requires Parties to submit to the COP, through the Convention Secretariat, periodic reports on the implementation of the Convention. The reporting requirements adopted at the first and third sessions of the COP introduced ‘graduated reporting arrangements’, with a reporting instrument containing three groups of questions against which Parties should report after two, five and eight years of ratification (136, 137).

At its fourth session in 2010 the COP adopted a single reporting instrument, comprising a set of core questions mandatory for all Parties,

and a set of optional questions, to be submitted by Parties every two years (133).

According to the current FCTC reporting arrangements, Parties are under obligation to collect data on their tobacco control policies and tobacco consumption and submit implementation reports to the Convention Secretariat every two years (133). Parties' reporting rates varied across reporting cycles (138-141). Despite their treaty obligation, not all Parties submit implementation reports in each reporting cycle, and some have never submitted an implementation report (142).

The FCTC reporting arrangements have been criticised by the FCA for not being fully utilised in decision making and improving the FCTC implementation rate (143) and the FCA called for a review of the reporting mechanism (143). At its sixth session in 2014 the COP established an expert group to review the FCTC reporting arrangements (144). The expert group was tasked to examine the reporting requirements of other international treaties and make recommendations on the implementation reporting mechanism (145). In 2017, the WHO FCTC issued a report on good practices in data collection, preparation and submission of FCTC implementation reports, making recommendations for Parties to invest in data collection systems and human resources for FCTC reporting (146).

WHO global progress reports

The information contained in the Parties' implementation reports form the basis for the FCTC global progress reports. The global progress reports on the implementation of the FCTC are prepared by the WHO Convention Secretariat (136). Since 2005, global progress reports on the implementation of the FCTC were produced every year between 2007 and 2009, and from 2010 onwards every two years.

In the first two reporting cycles Parties' reporting rates were 63% and 80% (138) before subsequently falling to around 70% since 2012. In 2010, 135 out of 153 (88% of Parties) submitted reports (139), in 2012, 126 out of 174 (72% of Parties) submitted reports (140). In 2014, 130 out of 177 (73% of Parties) submitted reports (74%) (141), and in 2016, 133 out of 180 (74%) (147).

WHO MPOWER reports

In addition to the global progress reports on implementation of the FCTC, since 2008 the WHO introduced a series of periodic reports on the global tobacco epidemic and the implementation of tobacco control

measures corresponding to one or more of the FCTC substantive Articles, as follows (4):

M Monitoring tobacco use and prevention policies; (Article 8, 11, 12, 13)

P Protecting people from tobacco smoke (Article 8)

O Offering help to quit tobacco use; (Article 14)

W Warning about the dangers of tobacco (Articles 11, 12, 14)

E Enforcing bans on tobacco advertising, promotion and sponsorship (Article 13)

R Raising taxes on tobacco (Article 6)

So far, MPOWER measures that have been reported on include implementing smoke free environments (7); warning about the dangers of tobacco (2011 MPOWER Report) (148), enforcing bans on tobacco advertising, promotion and sponsorship 2013 MPOWER Report (6); and raising taxes on tobacco 2015 MPOWER Report (149). There has not been an MPOWER report on the implementation of Article 14.

Shadow reporting

Shadow reporting by non-governmental and civil society organisations was used to monitor implementation of the FCTC in countries in Africa, Europe and Latin America (150, 151).

The FCA Tobacco Watch shadow reports used observational data on the implementation of the three FCTC substantive articles in 49 countries: Article 8 (Protection from exposure to tobacco smoke), Article 11 (Packaging and labelling of tobacco products), Article 13 (Tobacco advertising, promotion and sponsorship), (152). The 2012 Tobacco Watch report covered two additional articles using observational data from 65 countries - Article 5.3 (Tobacco industry interference) and Article 6 (Tax and price measures) (153). There has not been shadow reporting on the implementation of Article 14.

1.3.5.3 The tobacco industry and FCTC implementation

In recent years the tobacco industry is increasingly using international trade agreements to dispute Parties obligation to implement the FCTC provisions, often threatening governments with legal action in order to delay or prevent them from implementing tobacco control measures (141).

Uruguay was the first country taken to court by the tobacco giant Philip Morris International after the government passed a law that required health warnings to cover 80 percent of tobacco packaging (154). In 2014 Australia reported being involved in international legal disputes with Philip Morris International in relation to graphic health warnings on tobacco products (Article 11) (141). The same year British American Tobacco used aggressive lobbying to stop passing plain-packaging regulations in the United Kingdom (155). Legal challenges by the tobacco industry are expected to rise as more countries are under obligation to implement tobacco control measures.

Many more governments are being threatened or involved in domestic disputes in relation to measures aimed at tobacco products regulation (as per Article 9 and 10), implementation of pictorial warnings on tobacco packaging (as per Article 11), and tobacco advertising (as per Article 13) (155). Although some countries won legal cases brought against them by multinational tobacco companies, expensive litigation threats are used as one of the tobacco industry tactics to stop governments, particularly in low and middle income countries, from implementation of tobacco control legislation.

1.3.5.4 Progress in FCTC implementation

In the last two reporting cycles, 2014 and 2016, the WHO reported slow and uneven implementation of the FCTC (141, 147), with an average implementation rate across 16 substantive articles varying from 15% to 88% (147).

The articles with the highest implementation rates (above 65%) were Article 8 (smoke-free policies), Article 16 (prohibition on sales of tobacco products to and by minors), Article 11 (health warnings on packaging of tobacco products), and Article 12 (education and public awareness campaigns about the dangers of smoking). The implementation rate of the remaining articles ranged between 41% and 64%, in descending order: Article 13 (bans on tobacco advertising, promotion and sponsorship), Article 6 (price and tax measures 6), Article 10 (tobacco product disclosure), Article 14 (tobacco dependence treatment), and Article 9 (regulation of the content of tobacco products) (141).

1.3.6 Progress in implementation of FCTC Article 14 and Article 14 guidelines

The average implementation rate of Article 14 in 2014 was 51%, based on 130 Parties' implementation reports (141), and 50% in 2016 based on 133 Parties' reports (147).

In addition, independent surveys found that many Parties did not have national tobacco cessation strategies, treatment guidelines and sustainable government funding for cessation (156-159) and different progress by countries with different income levels. In a survey of 121 countries conducted in 2012 countries, of the 53 countries that reported having treatment guidelines, 75% were high and 11% middle and lower middle income (158). Access to cessation support and medications were also unequally distributed, with the provision of cessation services generally lower in low and lower-middle income countries (158). The same survey found that less than half of the countries had a basic tobacco cessation infrastructure, including recording patients' tobacco use in medical notes and offering help to quit to health care workers who use tobacco.

1.3.7 Article 14 and the role of healthcare workers in tobacco cessation

Healthcare workers worldwide have an important role to play in curbing the global tobacco epidemic. The FCTC Article 14 guidelines recommend that all healthcare providers should be involved in systematic identification of tobacco users and provision of brief advice (advice to stop using tobacco, usually taking a few minutes, given to all tobacco users as part of routine medical consultation or interaction) (132). The guidelines also emphasise that as part of their professional role and standing in the community, healthcare providers should set an example by not using tobacco (132).

As part of their role in disease prevention, HCWs are in a unique position to provide health advice, motivate and assist patients who use tobacco to quit (121, 160). In their capacity as health experts who possess professional knowledge and awareness of the addictive properties of tobacco and various negative effects of tobacco use on health, they are well placed to encourage and support tobacco users to stop using tobacco following evidence-based tobacco cessation guidelines (49, 161).

1.3.8 The global tobacco epidemic and healthcare workers

Declines in smoking prevalence in the second half of the 20th century were first observed among physicians in the UK and the US (112, 162). Between 1951 and 1961 the proportion of cigarette smokers among male doctors in the UK decreased from 38% to 23% (112). Similar declines in prevalence were observed among physicians in the US, from around 40% in the 1960s to less than 10% by the 1980s (162), and in other countries (163, 164). For example, the proportion of Australian physicians who had quit smoking rose from 8% to 38% between mid-1960s and late 1970s, and by the late 1990s the prevalence had declined to about five percent. Similar trends were reported among US physicians, with a decrease in prevalence from 19% to three percent in the 90s, while in nurses, despite some decreases, the prevalence was above 18% (165).

The historical declines in smoking prevalence that started among physicians in the UK, the US and other English- speaking countries were likely to be due to an increasing awareness of the harmful effects of smoking arising from the first scientific evidence on smoking as a cause of lung cancer (31-33, 166) followed by the 1962 Royal College of Physicians highly influential report on smoking in relation to lung cancer and other diseases (112) and the 1964 US Surgeon General Report on smoking and health (114).

However, the wide publicity on the effects of smoking on health in the 60s did not produce the same changes in smoking behaviour among

the general population. The annual cigarette consumption per adult increased by 14% in the UK (112) while in the US the consumption temporary decreased by 6% before rising again (162). It was not until a decade later that the smoking prevalence in the general population also began to fall. For example, the prevalence halved between 50s and 90s in the UK, to 39% for men and 33% for women (167).

While some evidence suggests that physicians' quitting behaviour may increase provision of anti-smoking counselling to patients (163), there is not enough evidence to support the hypothesis that reductions in smoking prevalence in HCW alone is a driver for quitting in the general population. Other factors, such as bans on advertising, taxation, mass media campaigns and other tobacco control measures are more likely to be the cause of reductions in smoking prevalence in the populations of high income countries.

However, high rates of smoking among physicians and nurses are likely to influence the perception of smoking as less harmful. Medical doctors and nurses are often seen as role models and by not using tobacco or stopping using tobacco, they can play a crucial role in changing the social acceptability of tobacco.

Equally, health professionals who use tobacco reportedly may have negative attitudes to providing cessation support to patients (168, 169).

Systematic reviews of the association between smoking status and advising patients to quit found that doctors and nurses who smoked were 17% and 13% less likely to advice patients compared to their non-smoker counterparts (170, 171).

While there have been significant declines in prevalence among physicians in Australia, the USA, and New Zealand (162-164), smoking rates of above 40% were reported among GPs in Bulgaria and Slovakia (168), and above 50% among physicians in Armenia, China, Pakistan, Romania, and Ukraine in the 2000s (172). Data from China show that smoking in Chinese male physicians continued to rise in the late 90s from 50.9% to 61.3% and only slightly decreased to 58% in 2005, while in female physicians smoking tripled from 4.8% to 12% by 2005 (173). A recent review of smoking prevalence among nurses found large variations in smoking prevalence, from 1% in Chinese to 11% in Australian and above 40% in Serbian and Italian nurses (169).

The WHO Global Health Professions Student Survey (GHPSS) data from 2005 to 2009 also showed a high prevalence of tobacco use among 3rd year medical students in South East Asia, for example 37.3% of the surveyed male medical students in Bangladesh were current cigarette smokers and 38.9 used any tobacco products. Similarly high prevalence of cigarette smoking and other tobacco use was reported by medical students in Nepal, and other countries in the

region (174). The GHPSS conducted in 2010 in Turkey reported that 29.3% of male students and 11.1% of female students were current smokers, and 40% of males and 18.9% of females were users of any other tobacco products (175).

The WHO GHPSS were conducted with a limited number of countries and the most recent data were from 2010. However, there were no corresponding surveys among HCWs. Currently, there is a lack of monitoring data on tobacco use among HCWs globally, and the prevalence is unknown.

1.4 Justification for thesis

The evidence presented in Chapter one provides an overview of the global tobacco epidemic and the importance of tobacco dependence treatment in overturning its consequences. While the prevalence of tobacco use is falling in high income countries, tobacco consumption is high and increasing in middle and low income countries where tobacco related deaths are projected to reach unprecedented rates.

While tobacco dependence treatments do not have a major impact on lowering smoking prevalence, it is important for reducing smoking related harm and improving health outcomes.

Many tobacco deaths can be avoided if current tobacco users stop using tobacco. Research evidence shows that quitting without cessation support is far less effective compared to quitting with cessation support. Evidence based tobacco dependence treatments are available and helping smokers to stop is a key tobacco demand reduction measure required by the FCTC Article 14.

The implementation of Article 14 in Parties to the treaty is monitored by the WHO FCTC Secretariat. However, the monitoring of the Article 14 has a number of weaknesses. First, it relies on Parties' submitting bulky implementation progress reports on an extensive list of FCTC indicators on a regular basis. This may present a particular challenge for countries without sophisticated data collection systems such as many low income countries. Other countries where tobacco control policy is not high on the policy agenda may also regard the FCTC implementation reports as a low priority and fail to submit implementation reports.

Building on the success of a previous survey of selected national contacts in 121 Parties in 2012, which achieved a high response rate especially from low and middle income countries, a similar approach was taken to collect data on national treatment infrastructure and provision according to the recommendations of Article 14, with the aim

of expanding the survey to a larger number of Parties, assess progress since 2012, and explore the association between implementation and country income level. The association between implementation of Article 14 and income level was further explored in a subsequent survey of national treatment guidelines recommendations. The implementation of Article 14 recommendations concerning tobacco use in HCWs was assessed in two ways. Firstly, by conducting an investigation of national guidelines content for specific recommendations addressing tobacco use in HCWs, and secondly by conducting a systematic review to estimate the prevalence of tobacco use in HCWs.

1.5 Aims and objectives

The main objective of the thesis was to assess progress in implementation of WHO FCTC Article 14 and the Article 14 guidelines recommendations for tobacco dependence treatment worldwide. The aspects of implementation examined in this thesis include national tobacco treatment infrastructure and provision, national tobacco treatment guidelines, addressing tobacco use in HCWs in tobacco treatment guidelines, and estimation of prevalence of tobacco use among HCWs worldwide.

The following studies were designed and conducted:

1. A survey of tobacco dependence treatment aimed to assess the level of provision across country income level and progress over time (Chapter two)
2. A survey of tobacco dependence treatment guidelines aimed to assess the national guidelines content and differences across country income level (Chapter three)
3. Investigation of national tobacco treatment guidelines content for recommendations addressing tobacco use among HCWs (Chapter four)
4. A systematic review and an estimation of the prevalence of tobacco use among HCWs (Chapter five)

CHAPTER 2: A survey of tobacco dependence treatment provision in 142 countries

2.1 Introduction

As described in Chapter 1, helping tobacco users to stop using tobacco is a key demand reduction measure of the WHO FCTC and Parties are required to implement effective measures to promote tobacco cessation and offer adequate treatment for tobacco dependence as part of a comprehensive tobacco control policy. Tobacco cessation and treatment measures are contained under the FCTC Article 14 and the Article 14 guidelines (121, 132), which require each Party to develop and disseminate comprehensive, evidence based tobacco treatment guidelines and establish tobacco treatment infrastructure and cessation support systems, taking into account national circumstances and priorities. The components of tobacco cessation infrastructure and tobacco cessation support systems are outlined in Chapter 1.

Previous surveys found that the majority of Parties did not have national tobacco cessation strategies, treatment guidelines and government funding for cessation (156, 157, 159). A survey of 121 countries in 2012 found that less than half had a basic tobacco cessation infrastructure and provision of cessation support was generally lower in low and middle income countries (158).

2.2 Aims

The aim of this chapter was to assess the current level of implementation of Article 14 and progress since the previous survey.

The specific objectives were:

- To identify suitable survey contacts in all FCTC Parties (179 countries at the time of the survey)
- To collect data on tobacco treatment infrastructure and cessation support measures in each Party;
- To assess association between implementation of measures and countries' income level;
- To assess overall progress in implementation of Article 14 over time since the 2012 survey

2.3 Methods

2.3.1 The survey contacts and data collection

There were 180 Parties to the FCTC at the time of the survey, 179 countries and the EU. The EU was excluded as a non-state Party. Contacts were identified in 169 Parties, representing 172 countries (the four UK countries - England, Northern Ireland, Scotland, and Wales, each with a different healthcare system, were surveyed individually).

Attempts to identify survey contacts in 10 Parties, including 5 low income, 3 lower-middle income and 2 upper middle income countries, were unsuccessful.

Respondents to the 2012 survey were approached by email in December 2014. For contacts who were not reached or did not reply, as well as for countries not surveyed before, new contacts were identified with the help of the WHO regional offices, the Framework Convention Alliance (FCA), Action on Smoking and Health (ASH) in the USA, the InterAmerican Heart Foundation, and other professional networks and contacts. The contacts were tobacco treatment specialists, including government officials and non-government representatives, involved in tobacco cessation or tobacco control in their countries.

Identifying the survey contacts started in December 2014 and was an ongoing process. Of the contacts who responded in the previous survey only 38% agreed to take part and those who did not reply or agree to take part were replaced with newly identified contacts. Where appropriate, respondents were also asked to send supporting information and references with their answers. Respondents were sent reminder emails every two weeks between March 2015 and July 2015 when the survey was closed.

2.3.2 The survey questionnaire

The questionnaire was based on the one used in the previous survey, with a few questions improved for clarity or better alignment with the Article 14 guidelines, and excluding detailed questions on treatment guidelines as findings from previous survey suggested that only a small proportion of countries had guidelines while other measures had been implemented to a various degree by most countries. It contained 26 questions covering basic infrastructure (an officially identified person in government responsible for cessation, a national treatment strategy, a treatment budget, treatment guidelines, mandatory recording of tobacco use in medical notes, training of HCWs to give brief advice and help to stop using tobacco), and cessation support systems (brief advice integrated into existing services, medications, mass media campaigns, quitlines, text messaging, specialised treatment services). The questionnaire was translated into French, Spanish and Russian, and sent electronically as a Word attachment (Appendix I). The questionnaire was piloted with 23 countries of the main sample before the main survey in March 2015.

2.3.3 Analysis

The survey data were analysed by country World Bank (WB) income classification categories as at the 1st of July 2014 (176). The analyses were conducted in Stata SE14. Chi-Squared statistic was used to test

for significant difference in implementation across WB income level and McNemar exact test to examine changes over time.

2.4 Results

2.4.1 Response rate

The survey response rate was 83% (142 respondent countries of 172 surveyed countries). The highest response rate by WB income category was 92% in high income countries (HIC, n=49), 80% upper middle income countries (UMIC, n=40), 82% lower middle income (LMIC, n=36), and 68% in low income countries. (LIC, n=17). The highest response rate by WHO region was for the Americas (97%), the lowest South East Asia (67%)

2.4.2 Basic tobacco treatment infrastructure

According to respondents, just over half of countries had a government official responsible for treatment (54%). Only a quarter had a clearly identified treatment budget (25%), less than a third had an official treatment strategy (32%) and less than half had official national treatment guidelines (40%). Just under a third mandated recording tobacco use in medical notes (30%) and less than half offered cessation support to HCWs to stop using tobacco (44%) (Table 2.1). Just over 80% trained some HCWs to give brief advice and over a third

incorporated tobacco cessation into training curricula of healthcare students and workers (36%). There was a significant difference in provision across income level for treatment budget, official treatment strategy, national treatment guidelines, and cessation in training curricula but not for the other measures (Table 2.1).

Table 2. 1 Basic treatment infrastructure by WB country income level

Question	% Yes (n)					p-value
	All (142)	**HIC**(49)	**UMIC** (40)	**LMIC** (36)	**LIC** (17)	
Is there an officially identified person in government (or contracted by government) who is responsible for tobacco dependence treatment?	**54** (76)	**57 (**28)	**63** (25)	**53** (19)	**24** (4)	0.052
Does your country have a clearly identified budget for tobacco dependence treatment?	**25** (35)	**43** (21)	**20** (8)	**17** (6)	**0** (0)	0.001
Does your country have an official, written, national tobacco treatment strategy?	**32** (42)	**51** (25)	**25** (10)	**31** (11)	**0** (0)	<0.001
Does your country have official national tobacco treatment guidelines?	**40** (57)	**63** (31)	**38** (15)	**28** (10)	**6** (1)	<0.001
Is it mandatory to record patients' tobacco use in medical notes in your country?	**30** (42)	**39 (**10)	**25** (10)	**25** (9)	**24** (4)	0.425
Does your country offer help to healthcare workers and other relevant groups to stop using tobacco?	**44** (63)	**53** (26)	**53** (21)	**25** (9)	**41** (7)	0.132
Are healthcare workers trained to give brief advice (*Yes, some*)	**81** (100)	**73** (36)	**80** (32)	**58** (21)	**65** (11)	0.129
Is tobacco cessation incorporated into the training curricula of healthcare students and workers?	**36** (51)	**59** (29)	**28** (11)	**19** (7)	**24** (4)	<0.001

WB=World Bank; HIC= high income countries; UMIC=upper middle income countries; LMIC=lower middle income countries; LIC=low income countries.

2.4.3 Cessation support systems

Mass media campaigns promoting cessation

Overall only 13% of respondents reported mass media campaigns promoting cessation in the past six months: 23% of HIC, 15% of UMIC, 3% of LMIC and 6% of LIC (p=0.002 for difference across income level, Table 2.2).

Table 2. 2 Tobacco cessation support systems by WB country income level

Question	%Yes (n)					p-value
	All (142)	**HIC** (49)	**UMIC** (40)	**LMIC** (36)	**LIC** (17)	
Mass media campaigns promoting cessation in the past six months?	**13 (**19)	**23 (**11)	**15** (6)	**3** (1)	**6** (1)	0.002
Brief advice integrated into existing services?	**44** (62)	**51** (25)	**48** (19)	**31** (11)	**41** (7)	0.281
Cessation support via text messaging?	**17** (24)	**35** (17)	**8** (3)	**11** (4)	**0** (0)	0.001
Quitlines						
A free national quitline in all major regions?	**23** (33)	**53** (26)	**15** (6)	**3** (1)	**0** (0)	<0.001
A free quitline but only in selected regions?	**6** (9)	**4** (2)	**10** (4)	**8** (3)	**0** (0)	
A free national quitline but not tobacco only?	**8** (11)	**10** (5)	**8** (3)	**6** (2)	**6** (1)	
People answering always or almost always?	**82** (42)	**87** (27)	**85** (11)	**50** (3)	**100** (1)	
Offer multiple sessions with counsellors calling back to offer support?	**51** (26)	**66** (20)	**39** (5)	**17** (1)	**0** (0)	
Refer callers to local specialist treatment services?	**84** (43)	**87** (27)	**92** (12)	**50** (3)	**100** (1)	
Offer information about tobacco cessation medications?	**67** (34)	**74** (23)	**62** (8)	**33** (2)	**100** (1)	
Specialised tobacco dependence treatment service						
A network of support covering the whole country?	**26** (37)	**55** (27)	**20** (8)	**6** (2)	**0** (0)	<0.001
Treatment support in selected areas?	**37** (53)	**35** (17)	**45** (18)	**33** (12)	**35** (6)	
Free to users?	**48** (43)	**55** (24)	**54** (14)	**14** (2)	**50** (3)	
Partially free to users?	**38** (35)	**36** (16)	**31** (8)	**57** (8)	**50** (3)	
Not free to users?	**12** (11)	**7** (3)	**15** (4)	**29** (4)	**0** (0)	

WB=World Bank; HIC= high income countries; UMIC=upper middle income countries; LMIC=lower middle income countries; LIC=low income countries.

Brief advice

According to respondents, brief advice was integrated into existing services in less than half of countries (44%): 51% of HIC, 48% of UMIC, 31% of LMIC and 41% of LIC (p=0.281) for difference across income level, Table 2.2).

Text messaging

Overall 17% of respondents advised that text messaging support was available: 35% of HIC, 8% of UMIC, 11% of LMIC and no LIC (p<0.001, for difference across income level, Table 2.2).

Quitlines

Free quitlines with national coverage were reported by 23% of respondents overall: 53% of HIC, 15% of UMIC, 3% of LMIC and no LIC (p<0.001, for difference across income level, Table 2.2). Quitlines in selected regions, or helplines that were not tobacco-only, were reported in less than 10% of countries.

More than 80% of all quitlines had people answering always or almost always, and referred callers to local treatment services. Just over half

offered multiple sessions with counsellors calling back, and 67% provided information about tobacco cessation medications (Table 2.2).

Specialised treatment support

Respondents in just over a quarter of countries (26%) reported a network of specialised tobacco dependence treatment services covering the whole country: 55% of HIC, 20% of UMIC, 6% of LMIC and no LIC ($p<0.001$, for difference across income level, Table 2.2). An additional third (37%) reported specialised treatment support in selected areas: 35% of HIC, 45% of UMIC, 33% of LMIC and 35% of LIC. Specialised treatment support was free to users in 48% of countries that offered it: 55% of HIC, 54% of UMIC, 14% of LMIC and 50% of LIC (Table 2.2).

Access to cessation support

Respondents in over half of countries indicated that tobacco users could access cessation support from GPs (67%), hospitals (62%), addiction services (59%) and pharmacies (51%), and in 49% of mental health settings. Cessation support from dentists, educational institutions, work places and prisons could be accessed in less than a third of countries. Access to cessation support from GPs, pharmacies, dentists, addiction services, work places, and prisons was significantly less in middle and low income countries than in high income countries

(Figure 2.1).

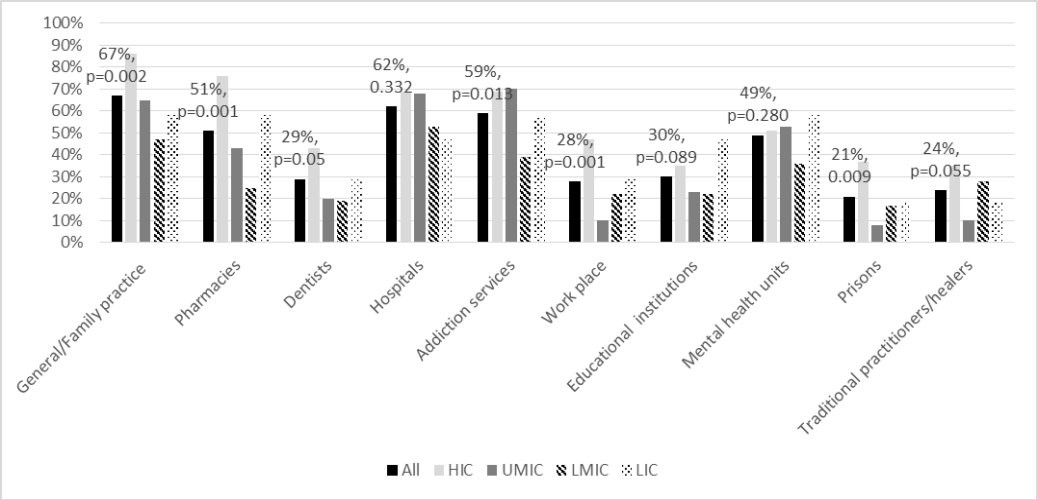


Figure 2. 1 Access to cessation support in different settings by WB country income level

"Can tobacco users get help to stop smoking in the following settings?" The bars show 'Yes' responses overall (black) then by income level in the order HIC, UMIC, LMIC, LIC. P-values are for difference across income level. WB=World Bank; HIC= high income countries; UMIC=upper middle income countries; LMIC=lower middle income countries; LIC=low income countries.

Availability of cessation medications

According to respondents, nicotine patches and gum were available in approximately three-quarters of countries, ranging from 98% of HIC to 47% of LIC (p<0.001, for difference across income level). Availability of bupropion and varenicline also decreased with income level. Bupropion was available in 90% of HIC and 18% of LIC (p<0.001, for difference across income level), varenicline in 88% of HIC and 6% of LIC (p<0.001, for difference across income level. Cytisine was only

available in 14% of countries overall (p=0.692, for difference across income level) (Table 2.3).

Table 2. 3 Availability of cessation medications by WB country income level

Medication	**Available, %*Yes*** (n)					**p-value**
	All (142)	**HIC** 49)	**UMIC** (40)	**LMIC** (36)	**LIC** (17)	
NRT patch	**74** (104)	**98** (48)	**73** (29)	**53** (19)	**47** (8)	<0.001
NRT gum	**72** (102)	**96** (47)	**60** (24)	**61** (22)	**53** (9)	<0.001
Other NRT	**45** (63)	**69** (34)	**40** (16)	**25** (9)	**24** (4)	<0.001
Bupropion	**60** (84)	**90** (44)	**58** (23)	**39** (14)	**18** (3)	<0.001
Varenicline	**54** (76)	**88** (43)	**48** (19)	**36** (13)	**6** (1)	<0.001
Nortriptyline	**33** (46)	**53** (26)	**28** (11)	**19** (7)	**12** (2)	0.001
Cytisine	**14** (19)	**10** (5)	**13** (5)	**19** (7)	**12** (2)	0.692

WB=World Bank; HIC= high income countries; UMIC=upper middle income countries; LMIC=lower middle income countries; LIC=low income countries.

Affordability of cessation medications

Most respondents in countries where cessation medications were available, rated them as affordable to most tobacco users in their countries but with a clear gradient from high to low income countries. For example, nicotine gum was rated affordable in 85% of HIC, 58% of UMIC, 45 of LMIC and 33% of LIC (p<0.001, for difference across income level); varenicline was rated affordable in less than a third of UMIC and LMIC and in no LIC. There was no income gradient in the

affordability of cytisine (p=0.821) (Table 2.4).

Table 2. 4 Affordability of cessation medications by WB country income level

Medication	Affordable, %Yes (n)					p-value
	All	HIC	UMIC	LMIC	LIC	
NRT patch	**63** (65)	**79** (36)	**52** (15)	**53** (10)	**25** (2)	<0.001
NRT gum	**66** (67)	**85** (40)	**58** (14)	**45** (10)	**33** (3)	<0.001
Other NRT	**68** (43)	**94** (32)	**38** (6)	**44** (4)	**25** (1)	<0.001
Bupropion	**57** (48)	**73** (32)	**43** (10)	**36** (5)	**33** (1)	<0.001
Varenicline	**54** (41)	**77** (33)	**32** (6)	**15** (2)	**0** (0)	<0.001
Nortriptyline	**59** (27)	**65** (17)	**55** (6)	**57** (4)	**0** (0)	0.003
Cytisine	**68** (13)	**80** (4)	**80** (4)	**57** (4)	**50** (1)	0.821

WB=World Bank; HIC= high income countries; UMIC=upper middle income countries; LMIC=lower middle income countries; LIC=low income countries.The percentages are calculated by dividing the number of countries where the medication is affordable by the number of countries where the medication is available (n) as shown in Table 3.

2.4.4 Changes in treatment provision since 2012

The survey results were compared with the results in the 2012 survey for those measures that were comparable, for a subset of 99 countries that completed both surveys and did not change their WB income level: 36 HIC, 28 UMIC, 23 LMIC and 12 LIC (Table 2.5).

Table 2. 5 Country respondents in two surveys by WB country income level

Countries by WB income category	Responded in 2012 survey, n	Responded in 2015 survey, n	Excluded from longitudinal analyses (did not respond or changed income category), n	Included in longitudinal analyses, n
LIC	19	17	5	12
LMIC	30	36	13	23
UMIC	36	40	12	28
HIC	36	49	13	36
All	121	142	*43	99

WB=World Bank; HIC= high income countries; UMIC=upper middle income countries; LMIC=lower middle income countries; LIC=low income countries.

Note: The 43 excluded countries included 23 that did not respond in the 2012 survey, 12 that did not respond in the 2015 survey and 10 that changed their WB income category.

Overall, whilst provision of some measures increased over time, such as having a government official responsible for cessation, an increase by 14 percentage points (p=0.0351) and treatment guidelines, an increase by 10 percentage points (p=0.629), there was little change in others, such as mass media campaigns promoting cessation, mandatory recording of tobacco use in medical notes, treatment budget for cessation, and having a free national quitline (Table 2.6).

Table 2. 6 Changes in treatment provision between 2012 and 2015

Survey question	**2012 % yes** (n)	**2015 % yes** (n)	Change	p-value
Government official responsible for cessation?	**40** (40)	**54** (53)	14	0.035
Treatment budget?	**22** (22)	**23** (23)	1	1.00
Treatment guidelines?	**46** (46)	**56** (55)	10	0.629
Mandatory recording tobacco use in patients' notes?	**21** (21)	**26** (26)	5	0.774
Healthcare workers offered help to stop using tobacco?	**46** (46)	**42** (42)	- 4	0.487
Mass media campaigns promoting cessation?	**55** (54)	**56** (55)	1	1.00
National free quitline?	**29** (29)	**30** (30)	1	1.00
Specialised cessation services covering the whole country or in selected areas?	**69** (68)	**69** (68)	0	1.00

Notes: The total base is 99 – the number of countries who completed the survey in 2012 and 2015. The change is in percentage points.

2.5 Discussion

2.5.1 Main findings

The implementation of Article 14 remains slow and with wide variation in the implementation of various infrastructure and cessation support measures. This finding is consistent with that of the WHO Global Progress Report based on 130 Parties' implementation reports (141).

Overall, in 2015, only three infrastructure measures were implemented by the majority of countries: training healthcare workers to give brief

advice, having a nominated official responsible for tobacco dependence treatment, and access to cessation support in primary care, pharmacies and hospitals. Other key infrastructure measures recommended by Article 14 guidelines such as national tobacco treatment strategy, national tobacco treatment guidelines, mandatory recording patients' tobacco use in medical notes, helping HCWs to stop using tobacco, and budget for treatment were implemented in a minority of countries. For most measures provision of cessation support to tobacco users was positively associated with country income level.

2.5.1.1 Basic treatment infrastructure

The Article 14 guidelines recommend strengthening or creation of a national infrastructure to promote cessation and provide tobacco dependence treatment, and establishing a sustainable source of funding through tobacco tax and price increases, also recommended by other FCTC Articles. The finding that only a small minority of countries had a clearly identified budget for tobacco treatment suggests that tobacco tax revenues may not have been allocated to treatment. There is a potential for tobacco tax increases in all countries but particularly in low and middle income ones where tobacco prices and taxes are generally low and not been increased regularly (177). China's tobacco tax increase of 6 % in the existing ad valorem tax in 2015 generated an extra 101 billion yuan (US$ 15 billion) in tax revenues for the government two years after the reform (177). It is estimated that an

increase of 50% in cigarette excise taxes in 22 low income countries would generate a total of USD1.42 billion, equivalent to an increase in government expenditure by more than 25% (178).

However, the Article 14 guidelines also stress the importance of using existing infrastructure and resources as much as possible, in order to keep costs down and facilitate quick action, and highlight several measures that are low cost. These include identifying tobacco users in medical notes, and integrating brief advice by healthcare professionals into the existing healthcare system, as well as developing an official national strategy and guidelines. In low and middle income countries affected by the dual epidemics of tobacco smoking and tuberculosis, access to cessation support in existing treatment facilities for diagnosis and treatment of tuberculosis can be extremely beneficial (179). Behavioural cessation support has been proved to be effective in patients with suspected tuberculosis (180).

Recording tobacco use in all medical notes is essential to identify tobacco users and thus get the issue on to the healthcare system agenda, as well as providing an opportunity for brief advice to stop smoking. Brief advice given by a primary care physician has been shown to encourage quit attempts and can potentially be one of the most cost effective interventions when implemented throughout the healthcare system (47). According to a survey of smokers in 15 countries, between 50% and 70% of smokers visited a physician or

other healthcare providers in one year (181). The finding that only 30% of countries record tobacco use in medical notes and only 44% provide brief advice as part of the existing healthcare services, demonstrate the potential for quick improvement in the provision of low cost broad reach interventions that would save many lives.

Tobacco use by HCWs is another priority area that needs to be addressed as part of Article 14 implementation. Article 14 guidelines recommend that countries should provide specific programmes to promote cessation of tobacco use among HCWs and offer tobacco dependence treatment, however, only a minority of countries in this survey did so. Although there are no current estimates of the prevalence of tobacco use among HCWs, a review of literature has shown high prevalence of tobacco use among health professionals especially in low and middle income countries (172). HCWs who use tobacco not only undermine the public health messages about the harmful effects of tobacco on health but are less likely to encourage their patients to quit (170, 171).

2.5.1.2 Tobacco cessation support systems

Delivering anti-smoking messages and encouraging quit attempts via mass communication channels are measures recommended by both Article 14 and Article 12 guidelines (132, 182). Televised mass media campaigns in particular can potentially have wide population reach and

low per capita cost (183). However mass media campaigns require substantial upfront funding and may not be easily affordable in middle and low income countries. The findings showed that just over half of the countries had run mass media campaigns promoting cessation, and this increased by only one percentage point over the last three years. Television advertisements showing images of health harm caused by tobacco has been shown to be effective (184) and can be adapted for use with smokers in different countries thus reducing the set up and production cost substantially. Self-help materials (leaflets, booklets), printed or distributed electronically, is another affordable measure (59) that can be effective in lower income countries with widespread literacy and internet access.

The survey found that free national quitlines were available in only 23% of countries (Table 2), and increased by just one percentage point over the last three years in the cohort of 99 countries (Table 5). Quitlines require investment in infrastructure, people and training. As demand for cessation continues to grow in middle and low income countries (104, 185) text messaging might be a cheaper alternative to quitlines. Evidence from high income countries shows that mobile phone text messaging interventions can help tobacco users to stop smoking and behavioural support delivered via automated mobile phone text messaging is effective (59). Cessation support via text messaging, however, is a relatively recent development and the WHO guidelines for implementing text messages for smoking cessation provide limited evidence on the implementation of text messaging in LMIC (186).

The widespread use of mobile phones potentially allows for a more cost –effective delivery of cessation support to tobacco users compared to quitlines (71). It should be noted, however, that these interventions have only been tested in high income countries with well-established tobacco control policies and infrastructure, hence the results should not be generalised to other countries and contexts. In some countries, for example, compared to a free quitline, mobile phone charges can be a significant barrier to receiving tobacco cessation support if the person receiving the call/text is charged (187).

Quitlines, on the other hand, could benefit countries with less well established tobacco control infrastructure and public health services. Potential benefits of telephone quitlines in LMLICs include providing information and serving as a resources to everyone interested in tobacco cessation. Quitlines could also be part of a helpline for drug treatment, mental health services and tuberculosis/HIV thus lowering the cost.

Although medicines availability is excellent in HIC (for example almost all HIC have NRT; Table 3), the availability of affordable cessation medications remains an issue for middle and low income countries, including those medications considered to be globally affordable by a WHO definition (59). NRT patches and gum, which have been on the WHO List of Essential Medications since 2009 (188, 189), were

available in only just over half of LMIC and around a half of LIC and their affordability was low. Cytisine, a low cost medication, estimated to be 25 times cheaper than varenicline (190), was not licensed as a cessation medication outside countries in Central and Eastern Europe, and was available in less than 20% of middle and low-income countries. The results also suggest that nortriptyline, a low cost drug available in many countries as an antidepressant, has not been approved as a stop smoking medication despite evidence of similar efficacy to NRT (191).

Cessation medications have been shown to increase the success rate of cessation attempts (74, 75). Article 14 recommends that countries should collaborate to facilitate accessibility and affordability for treatment of tobacco dependence including pharmaceutical products. According to the survey, NRT patches were available in 8 low income countries (47%) and NRT gum was available in 9 low income countries (53%) and the affordability of NRT products were limited to only 2-3 of these countries. These findings agree with West's paper on the estimation of affordability of NRT globally (59). Given the low availability and affordability of NRT and other cessation medications, and possibly a low demand for cessation drugs in low income countries, prioritising non-pharmacological treatments such as brief advice and screening for tobacco use over pharmacological interventions may be a more achievable goal in the short term.

However, in the longer term as cigarettes are becoming more affordable in low income countries (192), governments need to start implementing measures to increase tobacco tax and make smoked tobacco use less affordable, reduce the cost of NRT and make low-cost cessation medications such as cytisine and nortriptyline (estimated to be globally affordable interventions) available (59). Low cost generic NRT products cost could also help improve their affordability in low income countries (59).

2.5.1.3 Progress in implementation of Article 14 since 2012

The Article 14 guidelines emphasise the importance of securing sustainable funding for cessation through tobacco price and tax increases, but clearly few countries have done so yet. As the survey showed, the number of countries with a budget for cessation increased by only 1%, since 2012.

Developing and disseminating a national cessation strategy, were another key infrastructure measure, and national treatment guidelines was achieved by only 40% of countries, an increase by only 9% in the last three years.

The cohort data also showed very little change in specialised treatment services. Although all countries should eventually aim for comprehensive treatment provision, clearly free nationwide specialised

cessation services like those in England, require a national cessation strategy and government funding (193), and thus are unlikely to be feasible in middle and low income countries. An additional consideration here is coverage, as they tend to reach a small proportion of the population. Were such specialised support to be delivered by trained multiple providers, including GPs, nurses, dentists, pharmacists, and community workers, as well as cessation specialists, and delivered also through telephone counselling (45, 46), then they might achieve better reach.

2.5.1.4 Association between implementation and income level

As with the previous survey, the implementation of tobacco treatment measures decreased with countries' income level (158). The clear income gradient in almost all main measures suggests that cost is (or is perceived to be) a barrier to the implementation of Article 14.

This finding may also reflect a broader phenomenon, that countries with fewer resources lag behind in implementing all aspects of the FCTC or that in countries with smoking prevalence estimated to be relatively low (14), tobacco treatment may not be perceived as a priority. However, smoking prevalence in low income countries nearly doubled since 2007 (194) and are predicted to rise in countries in the African (20, 195) and

the Eastern Mediterranean regions (20).

In many low and middle-income countries tobacco control action and implementing measures started relatively later than in high income countries. While tobacco treatment was recognised as an important part of tobacco control in high income countries in the late 90s (47, 156, 157) for many middle and low income countries engagement with tobacco control and tobacco treatment in particular did not begin until the adoption of the FCTC in the 2005 and the Article 14 implementation guidelines in 2010 (132). As this and the previous survey showed the gap in tobacco treatment provision between countries with different income level is not disappearing, and if the slow implementation of Article 14 continues it will inevitably lead to widening health inequality between high and middle and low income countries.

Implementation of Article 14 requires investment in national infrastructure and support systems which can be costly in low income countries. Low cost interventions such as mandatory recording tobacco use and providing brief advice are universally affordable.

2.5.2 Strengths and limitations

This is the most detailed and comprehensive tobacco treatment survey conducted to date, sent to contacts in 94% of FCTC Parties at the time of the survey and achieving an 83% response rate. However a survey

of such scale has limitations. The purposive sample of contacts in the survey were identified through various channels, some of them from national government, others from outside government who might have varying access to information as well as potentially different types of bias when providing information about their own countries. To increase the validity and reliability of responses the respondents were encouraged to discuss and verify their responses with colleagues, and where possible, provide supporting information with their answers, such as copies of documents and links to websites. Wherever possible, the survey responses were corroborated, using data from the previous survey or other sources.

Differences in cultural contexts and respondents' expertise occasionally lead to differences in interpretations of questions, about national cessation strategy and guidelines, or mass media campaigns. In particular, respondents with expertise in treatment may not distinguish between TV ads or campaigns such as World No Tobacco Day, and a major, comprehensive mass media campaign. When necessary, the respondents were asked to check and clarify their answers.

Respondents' knowledge of availability and affordability of cessation medications, especially those available on prescription, was also likely to vary. The wording of the question about availability of nortriptyline did not allow to distinguish between the drug being available as an antidepressant or as a licensed cessation medication. Given that

nortriptyline is not been approved as a cessation drug in most high income countries, even if available in low income countries, it is highly unlikely that it has been approved as a stop smoking drug.

Although the survey achieved 84% response rate overall, the response from low income countries was 68%, resulting in a much smaller sample in this group of countries compared to the middle and high income groups. If the low income countries that responded in the survey were the ones with more treatment provision than non-respondents that would have produced a more positive picture of tobacco treatment provision in these countries than it actually is.

2.5.3 Conclusions

FCTC Article 14 implementation is slow and shows a significant gradient by income level, with less treatment infrastructure and provision the lower the country income. If the current pattern of implementation continues, the gap between HIC and middle and low-income countries will grow wider, worsening existing health inequalities between countries. Implementation needs to be improved, with an emphasis on affordable, broad reach measures. Middle and low income countries should follow the Article 14 guidelines by first prioritizing core infrastructure measures, including developing an official national cessation strategy and guidelines, mandatory recording of tobacco use in medical notes, helping HCWs to stop using tobacco, along with broad

reach low cost interventions, including brief advice and text messaging.

CHAPTER 3: A survey of tobacco dependence treatment guidelines content

3.1 Introduction

Article 14 of the World Health Organisation (WHO) Framework Convention on Tobacco Control (FCTC) requires Parties to develop and disseminate comprehensive guidelines based on scientific evidence, and to take effective measures to promote cessation of tobacco use and adequate treatment for tobacco dependence (121).

Guidelines for the implementation of Article 14, adopted at the fourth Conference of the Parties to the FCTC in 2010, provide more detailed recommendations and outline the key characteristics of national tobacco treatment guidelines (132) which should:

- be evidence based
- be comprehensive, and include a broad range of interventions, for example brief advice, quitlines, behavioural support, and cessation medications
- cover all settings and providers, both within and outside the healthcare systems
- include a dissemination and implementation plan

- stress the importance of all service providers setting an example by not using tobacco, and that they be offered help to stop
- be developed in active collaboration with key stakeholders, including health professional organisations
- be widely endorsed at national level by health professional organisations and/or associations
- be protected from all actual and potential conflicts of interest
- be periodically reviewed and updated in light of new scientific evidence.

Previous surveys identified 31 guidelines in 2007 and 53 in 2012 (156, 159). The 2015 survey of tobacco treatment provision in 142 countries identified 57 guidelines. The treatment survey also showed a strong association between having treatment guidelines and country income level, with more than half of high income countries having treatment while fewer than half of middle income and only one low income country did.

It was not known if the guidelines content reflected the income differences and how different countries followed the recommendations of Article 14 and its guidelines. Building on the previous surveys, the aim of this chapter was to identify all countries with treatment guidelines among FCTC Parties, Signatories and non-Parties, and more specifically:

1) to review guidelines content in order to assess how well they follow the recommendations of the 2010 FCTC Article 14 guidelines, and 2) to assess the relationship between guideline content and country income level.

3.2 Methods

3.2.1 The survey sample

The survey sample was drawn from respondents in previous surveys who confirmed having treatment guidelines, including contacts in 68 Parties and two Signatories. Contacts were also found for seven non-Parties, not surveyed before. Parties that did not have guidelines in the 2015 survey (n=85) and non-respondents (n=30) were excluded. .

For the countries surveyed before the same contacts were invited to take part by email. For countries not surveyed before, contacts were identified with the help of the WHO regional offices, the Framework Convention Alliance (FCA), Action on Smoking and Health (USA) and other professional networks and contacts. The contacts were a mixture of tobacco control government officials, members of non-governmental health organisations, and tobacco cessation treatment specialists.

3.2.2 The survey questionnaire

The questionnaire was adapted from the 2012 survey and updated taking into consideration the feedback from ten international tobacco treatment experts known to the authors, most of whom helped design the previous version of the questionnaire. The final version contained nine items, including questions on the guidelines evidence base, interventions, the guidelines target audience, cessation medications, writing and review process, and funding and dissemination.

The survey contacts were emailed in March 2016 and asked to complete the questionnaire in an attached Word file (available in English, French, Spanish and Russian), or online (English only). Reminder emails were sent every two weeks between March and June 2016. Where responses were incomplete or unclear, respondents were asked for additional information or clarification. The survey was closed at the end of July 2016.

Survey responses were analysed by countries' World Bank (WB) income level classification on 1 July 2015 (176). Cochrane Armitage statistic was used to test association between guideline content and income level. Significant findings were explored using logistic regression.

The statistical analyses were conducted in Stata 14. In order to assess how recently guidelines had been updated, the year of publication of

previous versions were checked for each country, using data from our 2007, 2012 and 2015 surveys (156, 159).

3.3 Results

3.3.1 The survey response rate

Survey contacts were identified in 77 countries, including 68 Parties (countries that signed and fully or partially ratified the FCTC), 6 Signatories (countries that have signed but not ratified the FCTC), and 3 non-Parties (countries that have not signed and ratified the FCTC) at the time of the survey (Table 3.1).

Table 3.1 Tobacco treatment guidelines survey response rate

Countries	Contacts found, n	No reply, n	No guidelines, n	Completed the survey, n	Response Rate, %
Parties	68	11	0	57	**83.8**
Signatories	6	1	1	4	**83.3**
Non-Parties	3	2	1	0	**33.3**
Total	77	14	2	61	**82**

Responses were received from 63 countries out of 77, 82% response rate. Two countries reported not having guidelines, and the remaining 61 (57 Parties and 4 Signatories) completed the questionnaire (81%, 61/75) (Table 3.1).

3.3.2 Guidelines distribution by WB country income level

Sixty four percent of the 61 countries with guidelines were HIC, 21% UMIC, and 15% LMIC. No LIC reported having guidelines.

3.3.3 Professions, settings and client groups covered in guidelines

Almost all guidelines, 92%, are for primary care, and just over three quarters for health service managers and smoking cessation specialists; 93% are for doctors, 75% for nurses, 53% for dentists and 48% for pharmacists. Two thirds (67%) include hospitals, 53% addiction services and 48% mental health services; 76% cover pregnant tobacco users and 23% smokeless tobacco users. UMIC and LMIC country guidelines are likely to cover fewer healthcare professionals and settings compared with HIC. The trend is significant for doctors ($p=0.039$), nurses ($p=0.001$), pharmacists ($p<0.001$), dentists ($p=0.012$), smoking cessation specialists ($p=0.046$), and primary care ($p=0.030$). A similar trend was observed with mental health services ($p=0.048$) and pregnant tobacco users ($p=0.044$) in UMIC and LMIC (Table 3.2).

Table 3.2 Professions, settings, and client groups covered in guidelines by WB country income level

Which professions, settings, and client groups do the guidelines cover?	**%Yes** (n)				**p-value for trend**
	All (61)	**HIC** (39)	**UMIC** (13)	**LMIC** (9)	
Doctors?	**93** (57)	**97** (38)	**92** (12)	**78** (7)	**0.039**
Nurses?	**75** (46)	**87** (34)	**69** (9)	**33** (3)	**0.001**
Pharmacists?	**48** (29)	**62** (24)	**31** (4)	**11** (1)	**<0.001**
Dentists?	**53** (32)	**64** (25)	**39** (5)	**22** (2)	**0.012**
Smoking cessation specialists?	**77** (47)	**85** (33)	**69** (9)	**56** (5)	**0.046**
Healthcare service managers?	**76** (35)	**59** (23)	**62** (8)	**31** (4)	**0.534**
Primary care?	**92** (56)	**97** (38)	**85** (11)	**78** (7)	**0.030**
Hospitals?	**67** (41)	**72** (28)	**69** (9)	**31** (4)	**0.160**
Mental health services?	**48** (29)	**56** (22)	**39** (5)	**22** (2)	**0.048**
Addiction services?	**53** (32)	**59** (23)	**39** (5)	**31** (4)	**0.261**
Prisons?	**15** (9)	**21** (8)	**8** (1)	**0** (0)	**0.083**
Smokeless tobacco users?	**23** (14)	**28** (11)	**15** (2)	**11** (1)	**0.203**
Pregnant tobacco users?	**76** (35)	**67** (26)	**46** (6)	**33** (3)	**0.044**
Other?	**25** (15)	**21** (8)	**39** (5)	**22** (2)	**0.582**

WB=World Bank; HIC= high income countries; UMIC=upper middle income countries; LMIC=lower middle income countries.

Compared with HIC, LMIC guidelines were less likley to cover nurses, OR 0.07 (95% CI 0.01 – 0.40) and dentists OR 0.16 (95% CI 0.03 – 0.87) (Table 3.3). There was no strong association with income for other professions, settings and client groups.

Table 3.3 Professions, settings, and client groups covered in guidelines: UMIC and LMIC compared with HIC

*Professions, settings, and client groups in guidelines	HIC	UMIC, OR, (95%CI)	LMIC, OR, (95%CI)
Doctors?	1	0.32 (95% CI 0.02 - 5.44)	0.09 (95% CI 0.01 -1.16)
Nurses?	1	0.33 (95% CI 0.07 - 1.49)	0.07 (95% CI 0.01 -0.40)
Dentists?	1	0.35 (95% CI 0.10 - 1.28)	0.16 (95% CI 0.03 - 0.87)
Smoking cessation specialists?	1	0.41 (95% CI 0.09 - 1.77)	0.23 (95% CI 0.05 - 1.10)
Primary care?	1	0.14 (95% CI 0.01 - 1.76)	0.09 (95% CI 0.01 - 1.16)
Mental health services?	1	0.48 (95% CI 0.13 - 1.74)	0.22 (95% CI 0.04 -1.20)
Pregnant tobacco users?	1	0.43 (95% CI 0.12 - 1.54)	0.25 (95% CI 0.05 -1.16)

*Professions, settings and client groups for which p-value for trend was significant and more than one country answered “Yes”; HIC= high income countries; UMIC= upper middle income countries; LMIC=lower middle income countries; Odds ratios (OR), 95% confidence interval (CI).

3.3.4 Guideline content

Key recommendations

All guidelines recommend brief advice, 82% recommend recording tobacco use in medical notes, 98% recommend smoking cessation medications, 61% recommend quitlines, 31% recommend text messaging, 87% recommend intensive specialist support and 54% stress the importance of healthcare workers setting an example by not using tobacco (Table 3.4).

Table 3.4 Guidelines key recommendations by WB country income level

Question	%Yes (n)				p-value
	All (61)	**HIC** (39)	**UMIC** (13)	**LMIC** (9)	
Do the guidelines recommend brief advice?	**100** (61)	**100** (39)	**100** (13)	**100** (9)	-
Do the guidelines recommend recording tobacco use in patients' medical notes?	**82** (50)	**85** (33)	**69** (9)	**89** (8)	**0.855**
Do the guidelines recommend quitlines?	**61** (37)	**74** (29)	**31** (4)	**44** (4)	**0.017**
Do the guidelines recommend text messaging?	**31** (19)	**33** (13)	**31** (4)	**22** (2)	**0.539**
Do the guidelines recommend intensive specialist support?	**87** (53)	**97** (38)	**92** (12)	**33** (3)	**<0.001**
Do the guidelines stress the importance of healthcare workers setting an example by not using tobacco?	**54** (33)	**51** (20)	**69** (9)	**31** (4)	**0.937**

WB=World Bank; HIC= high income countries; UMIC=upper middle income countries; LMIC=lower middle income countries.

The logistic regression analysis confirmed that quitlines were less likely to be recommended in UMIC compared with HIC, OR 0.15 (95% CI 0.04 - 0.61) and intensive specialist support was less likely to be recommended in LMIC compared with HIC, OR 0.01 (95%CI 0.00 – 0.20) (Table 3.5).

Table 3.5 Guidelines key recommendations: UMIC and LMIC compared with HIC guidelines

*Key guidelines recommendations	HIC	UMIC, OR, (95%CI)	LMIC, OR, (95%CI)
Quitlines	1	0.15 (95% CI 0.04 - 0.61)	0.28 (95% CI 0.06 -1.23)
Intensive specialist support	1	0.32 (95% CI 0.01 - 5.44)	0.01 (95% CI 0.00 - 0.20)

*Key guidelines recommendations for which p-value for trend was significant and more than one country answered “Yes”; HIC= high income countries; UMIC= upper middle income countries; LMIC=lower middle income countries; Odds ratios (OR), 95% confidence interval (CI).

Smoking cessation medications

Almost all guidelines, 98%, recommend nicotine replacement therapy (NRT), 84% recommend bupropion, 82% recommend varenicline and 11% recommend cytisine (Table 3.6).

Table 3.6 Guidelines recommendations for cessation medications by WB country income level

Question	% Yes (n)				p-value for trend
	All (61)	**HIC** (39)	**UMIC** (13)	**LMIC** (9)	
Do the guidelines recommend NRT?	**98** (60)	**100** (39)	**92** (12)	**100** (9)	**0.505**
Do the guidelines recommend bupropion?	**84** (51)	**92** (36)	**77** (10)	**56** (5)	**0.008**
Do the guidelines recommend varenicline?	**82** (50)	**87** (34)	**75** (9)	**78** (7)	**0.354**
Do the guidelines recommend cytisine?	**11** (7)	**5** (2)	**8** (1)	**44** (4)	**0.003**

WB=World Bank; HIC= high income countries; UMIC=upper middle income countries; LMIC=lower middle income countries.

Compared with HIC, bupropion was less likely to be recommended in LMIC, OR 0.10 (95% CI 0.02 – 0.61), while cytisine was more likely to be recommended, OR 14.8 (95%CI 2.13 – 102.71) (Table 3.7).

Table 3.7 Recommended cessation medications in guidelines: UMIC and LMIC compared with HIC

*Recommended cessation medications in guidelines	HIC	UMIC, OR, (95%CI)	LMIC, OR, (95%CI)
Bupropion	1	0.42 (95% CI 0.06 - 2.84)	0.10 (95% CI 0.02 - 0.61)
Cytisine	1	1.68 (95% CI 0.14 - 20.35)	14.8 (95% CI 2.13 - 102.71)

*Recommended cessation medications in guidelines for which p-value for trend was significant and more than one country answered “Yes”; HIC= high income countries; UMIC= upper middle income countries; LMIC=lower middle income countries; Odds ratios (OR), 95% confidence interval (CI).

Other content

Around two thirds (66%) reference or refer to the Cochrane Library, 72% reference or refer to guidelines of other countries, and 59% are based on another country's guidelines or other guidelines; just over half (54%) of guidelines include evidence of cost-effectiveness (Table 3.8).

Table 3.8 Guidelines other content by WB country income level

Question	% Yes (n)				p-value for trend
	All (61)	**HIC** (39)	**UMIC** (13)	**LMIC** (9)	
Do the guidelines include evidence on cost-effectiveness?	**54** (33)	**59** (23)	**62** (8)	**22** (2)	**0.100**
Do the guidelines reference or refer to the Cochrane Library?	**66** (40)	**74** (29)	**77** (10)	**11** (1)	**0.003**
Do the guidelines reference or refer to the guidelines of other countries?	**72** (44)	**67** (26)	**92** (12)	**67** (6)	**0.529**
Are the guidelines based on another country's guidelines or other guidelines?	**59** (36)	**49** (19)	**77** (10)	**78** (7)	**0.094**

WB=World Bank; HIC= high income countries; UMIC=upper middle income countries; LMIC=lower middle income countries.

Compared to HIC, LMIC guidelines were less likely to contain references to the Cochrane Library of medical research, OR 0.04 (95%CI 0.00 – 0.39) (Table 3.9).

Table 3. 9 Other guidelines content: UMIC and LMIC compared with HIC

*Other content in guidelines	HIC	UMIC, OR, (95%CI)	LMIC, OR, (95%CI)
Reference/refer to the Cochrane Library	1	1.15 (95% CI 0.26 - 5.03)	0.04 (95% CI 0.00 - 0.39)

*Other content in guidelines for which p-value for trend was significant and more than one country answered "Yes"; HIC= high income countries; UMIC= upper middle income countries; LMIC=lower middle income countries; Odds ratios (OR), 95% confidence interval (CI).

3.3.5 Guidelines writing, dissemination and funding

Sixty one percent of guidelines clearly describe the writing and review process. National professional associations participated in the writing and review process of 77% of guidelines, and 66% are formally endorsed by them; 67% are formally endorsed or supported by the national government, and 61% were peer reviewed. Sixty nine per cent are published online, 74% as a book or report, and 21% in a peer review journal. Forty one percent of guidelines include conflict of interest statements for all authors; 69% received financial support from government or other public health organisation, 13% received financial support from the pharmaceutical industry, and 8% include the names and/or logos of pharmaceutical companies (Table 3.10). Fifty seven percent had a dissemination strategy.

Table 3.10 Guidelines writing and review process by WB country income level

Question	% Yes (n)				p-value for trend
	All (61)	**HIC** (39)	**UMIC** (13)	**LMIC** (9)	
Do the guidelines clearly describe the writing and review process?	**61** (37)	**66** (25)	**62** (8)	**44** (4)	**0.268**
Did national professional associations participate in drafting or reviewing them?	**77** (47)	**80** (31)	**77** (10)	**67** (6)	**0.441**
Are they formally endorsed by national professional associations?	**66** (40)	**67** (26)	**62** (8)	**67** (6)	**0.906**
Are they formally endorsed or supported by your national government?	**67** (41)	**67** (26)	**62** (8)	**78** (7)	**0.670**
Were they peer-reviewed?	**61** (37)	**67** (26)	**62** (8)	**38** (3)	**0.122**
Do they include conflict-of-interest statements for all authors?	**41 (25)**	**54 (21)**	**15 (2)**	**22 (2)**	**0.019**
Is there a strategy to disseminate the guidelines?	**57 (35)**	**66 (25)**	**54 (7)**	**33 (3)**	**0.075**
Do they clearly state who funded the guidelines?	**66** (40)	**72** (28)	**54** (7)	**56** (5)	**0.179**
Did they receive financial support from government or other public health organisations?	**69** (42)	**72** (28)	**62** (8)	**67** (6)	**0.429**
Did they receive financial support from the pharmaceutical industry?	**13** (8)	**14** (6)	**0** (0)	**22** (2)	**0.8636**
Do the names and/or logos of any pharmaceutical companies appear in the guidelines?	**8** (5)	**11** (4)	**0** (0)	**11** (1)	**0.716**
Where are the guidelines published					
In a peer reviewed scientific journal		**21** (13)	**26** (10)	**23** (3)	**0** (0)
As a report/book		**74** (45)	**74** (29)	**85** (11)	**56** (5)
Online		**69** (42)	**74** (29)	**69** (9)	**50** (4)
Other		**3** (2)	**0** (0)	**0** (0)	**22** (2)

WB=World Bank; HIC= high income countries; UMIC=upper middle income countries; LMIC=lower middle income countries.

Compared with HIC, UMIC guidelines were less likely to contain conflict- of-interest statements, OR 0.16 (95% CI 0.30 - 0.80) (Table 3.11).

Table 3.11 Guidelines writing, dissemination and funding: UMIC and LMIC compared with HIC

*Guidelines writing, dissemination and funding	HIC	UMIC, OR, (95%CI)	LMIC, OR, (95%CI)
Include conflict-of interest statements for all authors	1	0.16 (95% CI 0.30 - 0.80)	0.24 (95% CI 0.05 - 1.33)

*Guidelines writing, dissemination and funding for which p-value for trend was significant and more than one country answered "Yes"; HIC= high income countries; UMIC= upper middle income countries; LMIC=lower middle income countries; Odds ratios (OR), 95% confidence interval (CI).

3.3.6 Guidelines publishing and updating

The year of publishing of guidelines were available for 61 countries (Table 3.12). The year of guidelines updating could not be confirmed for one country (Morocco) and it was excluded from the analyses, leaving 60 countries for which the year of publishing and/or updating was available

Table 3.12 Guidelines published and/or updated by country and year according to multiple survey data

Country	WB income level	2007 Survey	2012 survey	2015 survey	2016 survey	Published or updated since 2012
Argentina	HIC	-	-	-	2014	yes
Armenia	LMIC	-	2009	2009	2009	no
Australia	HIC	2005	2011	2014	2014	yes
Austria	HIC	2004	2012	2012	2012	no
Bahrain	HIC	-	-	2006	2006	no
Belgium	HIC	-	2005	2008	2012	no
Bosnia and Herzegovina	UMIC	-	-	2002	2003	no
Brazil	UMIC	2004	2009	2011	2008	no
Brunei Darussalam	HIC	-	2005	2014	2014	yes
Canada	HIC	-	2010	2011	2011	no
Chile	HIC	2003	2003	2003	2003	no
China	UMIC	-	2009	2015	2015	yes
Czech Republic	HIC	2005	-	2015	2015	yes
Denmark	HIC	-	2011	2011	2011	no
El Salvador	LMIC	2010		2010	2010	no
England, UK	HIC	1998, 2000	2008	2013	2014	yes
Estonia	HIC	-	2010	2010	2011	no
Finland	HIC	2003	2012	2012	2012	no
France	HIC	1998	2007	2014	2014	yes

Georgia	LMIC	-	2010	2010	2010	no
Germany	HIC	2006	2005	2015	2015	yes
Greece	HIC	-			2016	new
India	LMIC	-	2010	2011	2011	no
Iran	UMIC	-	2007	2013	2012	no
Italy	HIC	2002, 2007	2010	2008	2011	no
Japan	HIC	2006	2010	2010	2010	no
Jordan	UMIC	-	2014	2016	2016	new
Kyrgyzstan	LMIC	2004	2004	2010	2010	no
Latvia	HIC	-	2006	2005	2005	no
Malaysia	UMIC	-	2003	2010	2003	no
Malta	HIC	-	-	2014	2014	new
Mexico	UMIC	2005	2002	2009	2012	no
Montenegro	UMIC	-	-	2009	2012	no
Morocco	LMIC	-	-	-	2013	not confirmed
Netherlands	HIC	2006	2009	2009	2009	no
New Zealand	HIC	2007	2007	2014	2014	yes
Northern Ireland	HIC	-	2011	2011	2011	no
Norway	HIC	2004	2004	2004	2016	yes
Pakistan	LMIC	-	2010	2009	2009	no
Panama	UMIC	2005	2009	2008	2008	no
Paraguay	UMIC	-	2011	2010	2010	no
Poland	HIC	2006	2008	2006	2008	no
Portugal	HIC	2002, 2008	2008	2008	2008	no

Romania	UMIC	-	2010	2011	2010	no
Russia	HIC	2005	-	-	2003	no
Scotland	HIC	2002, 2007	2010	2014	2014	yes
Singapore	HIC	-	2002	2013	2013	yes
Slovakia	HIC	2006	2008	2006	2007	no
Slovenia	HIC	2004	-	2000	2016	yes
Spain	HIC	2003	2009	2013	2013	yes
Sweden	HIC	1998	2011	2011	2011	no
Switzerland	HIC	2004	-	-	2011	no
Thailand	UMIC	-	2009	2009	2013	yes
Turkey	UMIC	-	2010	-	2014	yes
Ukraine	LMIC	-	-	2012	2012	new
UAE	HIC	-	2011	2014	2015	yes
Uruguay	HIC	-	2009	2009	2009	no
Venezuela	HIC	-	-	-	2012	new
Vietnam	LMIC	-	2010	-	2010	no
Wales	HIC	-	2008	2014	2014	yes
USA	HIC	1996, 2000	-	-	2008	no

WB=World Bank; HIC= high income countries; UMIC=upper middle income countries; LMIC=lower middle income countries.

3.3.7 Association between guidelines updating and income level

Of these 60 countries, 5 (8%) published guidelines for the first time since 2012, 18 (30%) had updated their guidelines since 2012, including 15 (39%) HIC, three (23%) UMIC and no LMIC. Guidelines updating was positively associated with income level (p-value for trend =0.027) (Table 3.13).

Table 3.13 Association between guidelines updating and WB country income level

Guidelines updating	**%Yes** (n)				**p-value for trend**
	All (60)	**HIC** (39)	**UMIC (13)**	**LMIC** (8)	
Updated since 2012	**30** (18)	**39** (15)	**23** (3)	**0** (0)	**0.027**

WB=World Bank; HIC= high income countries; UMIC=upper middle income countries; LMIC=lower middle income countries.

3.3.8 Association between guidelines updating and content

Compared with guidelines not updated since 2012, more recently updated or written guidelines recommended quitlines (83% compared with 49%, p=0.007), and intensive cessation support (100% compared with 78%, p=0.024) (Table 3.14).

Table 3.14 Recommendations included in guidelines published or updated before and after 2012

Recommendation, % Yes (n)	**Guidelines updated before 2012 (n=37)**	**Guidelines updated or published after 2012 (n=23)**	**p-value**
Recording tobacco use in medical notes	**76** (28)	**91** (21)	p=0.181
Brief advice	**100** (37)	**100** (23)	-
NRT	**100** (37)	**100** (23)	-
Bupropion	**81** (30)	**91** (21)	p=0.133
Varenicline	**76** (28)	**91** (21)	p=0.059
Cytisine	**14** (5)	**10** (2)	p=0.654
Specialised support	**78** (29)	**100** (23)	p=0.024
Quitlines	**49** (18)	**83** (19)	p=0.007
Text messaging	**24** (9)	**44** (10)	p=0.192
Stress the importance of healthcare workers setting an example by not using tobacco	**53** (20)	**57** (13)	p=0.982

3.4 Discussion

3.4.1 Main findings

The survey identified 61 countries with treatment guidelines in 2016, five of which had produced them since 2012. As in the 2012 survey

(159), the guidelines were disproportionately distributed by income level. More than two thirds were of high income countries, one third of middle income countries, and there were no low income countries with guidelines.

Most guidelines were broadly evidence based, all recommended brief advice and almost all recommended smoking cessation medications. Over 80% recommended recording tobacco use in medical notes and intensive specialist support, and over half stressed the importance of healthcare workers not using tobacco. Less than two thirds recommended quitlines and less than one third recommended text messaging. There were important differences in guidelines content by income, for example, middle income country guidelines covered fewer healthcare professionals and settings compared with HIC. Guidelines updating was positively associated with country income level.

3.4.1.1 Guidelines content and key recommendations

Most guidelines recommended brief advice and NRT, recommendations that did not significantly differ by country income level. However, fewer LMLIC guidelines recommended quitlines, intensive specialist support, and stop smoking medications, which perhaps is not surprising given that these interventions were found to be less available in these countries. According to the findings of the tretament provision survey only 15% of UMICs and 3% of LMICs had a free national quitline, and

20% of UMICs and 6% of LMICs had a specialised tobacco dependnence tretament service.

Given that these interventions require considerable resources this is perhaps not surprising. The most important implication of this may be that as new mobile technology develops, text messaging systems and mobile phone apps may prove a far more cost effective way of offering support to whole populations. However, only 31% of guidelines are currenlty recommening text messaging for cessation.

Another finding consistent with the findings from the treatment survey was that only half of the guidelines stress the importance of HCWs setting an example by not using tobacco. Given the high reported rates of tobacco use by HCWs and students in some countries (168, 170, 172, 196) this remains a seriously neglected area.

3.4.1.2 Guidelines funding, writing and review process

Many guidelines still fall short of good practice in the writing process, as recommended in the FCTC Article 14 guidelines. Only around two thirds clearly describe the writing and review process, are peer reviewed, and clearly state who funded the guidelines and less than half include conflict-of-interest statements for all authors. The figures are a little better for endorsement by national professional associations (66%) and the government (67%). Lack of government backing and

wide endorsement at national level could seriously undermine the authority of guidelines and undermine their implementation. Also, lack of transparency over authors' conflcts of interest is likely to undermine the authority and credibility of guidelines, as is pharmaceutical industry funding.

Given understandable suspicion about the potential influence of pharmaceutical industry funding on guideline content, it is suprising that some guidelines are still pharma funded. The FCTC Article 14 guidelines state that development of strategies to implement Article 14 should be protected from all actual and potential conflicts of interest. Countries need to follow the FCTC Article 14 Guidelines more rigorously if they wish their guidelines to have credibility. The current New Zealand guidelines are a model of good practice in this respect (197).

3.4.1.3 Guidelines updating and dissemination strategy

Nearly two thirds of guidelines were published or updated more than five years ago and 13% have not been updated since they were first published, some more than 10 years ago. Guidelines updating was positively associated with recoomendations for quitlines and intensive cessation support.

There was no association between guidelines updating and recommendation for text messaging, the evidence base for which has grown since the last survey (59, 71). This illustrates the need for all countries to update their guidelines in the light of new evidence base, something clearly recommended in the FCTC Article 14 guidelines.

However, regular updating of guidelines in order to reflect the evidence base was positively associated with income level suggesting that it may have cost implications for UMIC and LMIC. As a resource saving approach, guidelines can be based on other countries' guidelines or use independent research evidence such as the Cochrane Library of evidence based health research. It is interesting, however, that referencing the Cochrane Library was less common in these countries. Although the residents of over 100 low and middle income countries currently have free access to the Cochrane Library (198), through a number of initiatives, this may not apply to all countries.

This finding may reflect broader factors, however. For example, lower income countries are likely to have officials in charge who have to deal with all tobacco control areas, not just treatment, and possibly other topics as well, and simply have limited knowledge/expertise, limited time, and possibly even poor internet access.

One way of dealing with this may be basing guidelines on those of other countries, which over half say they do. However national

guidelines must be, by definition, for the country's own healthcare system, and must reflect the national priorities, infrastructure and resources available. Tools are now available to help countries write or update their guidelines, including a library of national guidelines (199) and a review of the evidence base written specially for guideline development, which includes an affordability calculator for use within a country, using national data (59). This review was used by New Zealand to update their guidelines (197), and could serve as a simple and affordable approach other countries could adopt.

The FCTC Article 14 guidelines emphasise that national cessation guidelines should have a dissemination strategy and implementation plan. In this survey only 57% of countries had a dissemination strategy.

Gidelines that have not been disseminated are unlikley to reach their target audiences and become implemented. The ways of dissemination can also affect the guidelines adoption of in practice (200). It is important that countries which have produced cessation guidelines without a dissemination strategy and implementation plan ensure that they are widely and effectivley disseminated, and that practical steps are taken (for example training, incentives) to implement them in real life.

3.4.2 Strengths and limitations

To the author's knowledge this is the most comprehensive survey of national tobacco treatment guidelines to date. Survey contacts were identified in all countries that previously said they had guidelines, as well as in additional countries for which such information was not available at the time of the survey. Another strength of the study is the use of longitudinal survey data to asses guidelines development and updating.

There are several limitations. The main limitation of this survey is that it was not practically possible to verify fully the accuracy of responses against the actual gudielines content. Wherever possible, respondents were asked to provide a copy of, or a web link to their guidelines with their completed survey to verify that the guidelines documents did exist and were available to access online, or in another format. However, the content of the documents were not inspected in detail as that would go beyond the aims and scope of this study, and would also require fluency in a large number of languages, making it practically impossible. Another limitation of the study is that assessing guidelines implementation was beyond its scope.

The survey was limited to countries with guidelines, therefore countries that did not respond or responded they did not have guidelines in the 2015 global tobacco treatment survey were excluded. Since the majority were low and lower middle income, it was highly unlikely for these countries to have developed treatment guidelines in the short

period of time (just one year) between the two surveys. Of the 30 countries not included in the survey, 17 were low or lower middle income, 10 upper middle income, and three high income. Although it can be speculated that it is possible for some of these countries to have had, or to have consequently developed treatment guidelines, of the 12 that responded in the 2012 survey, only two reported guidelines. The remaining 18 countries did not respond to any of the previous surveys (2012 and 2015), hence, it was not possible to verify their guidelines status.

Except for the 11 countries that reported guidelines in the 2015 survey but did not respond in this survey, the countries in the sample represent 84% of all FCTC Parties known to have guidelines, and 83% of Signatories. It was not possible to confirm the guidelines status for most of the non-Parties as survey contacts were idnetified in only three of the nine non-Parties, and only one replied. Given that the majority of non-Parties are low income countries, and guidelines development is associated with income level, it is unlikely for many of these countries to have devloped guidelines yet.

Since the majoirty of respondent countries were high income (twice as many as low and middle icome), this created inbalances in terms of sample sizes, and limited the use of statistical regression analysis in making comparision across income categories.

3.4.3 Conclusions

Overall these findings suggest that – as for treatment provision – producing tobacco cessation guidelines is a low priority. Twelve years after the FCTC came into force and seven years after the Article 14 guidelines were adopted, most countries still did not have official national cessation guidelines.

Lack of funding for tobacco treatment seems to be a major reason for lack of progress in guidelines development. The cost implications of developing and keeping the guidelines regularly updated appear to be a major barrier particularly for low income countries.

Developing evidence based tobacco dependence treatment guidelines endorsed by national governments and health professional associations is among the basic infrastructure measures required by Article 14. The usefulness of having guidelines, however, will depend on the extent to which they are implemented in clinical practice, and given that guidelines recommendations are not mandatory (60), it could be argued that clinicians might not adhere to them. As examples from some high income countries show, the implementation of clinical guidelines into practice requires additional resources and interventions to change health professionals' behaviour, particularly when adopting guidelines relating to evidence based practice (201).

Availability of sustainable funding for tobacco cessation and making it a public health priority, therefore, is crucial for developing and keeping tobacco treatment guidelines up to date as well as encouraging the implementation of evidence based interventions recommended in guidelines into clinical practice.

In the absence of funding for developing and implementing tobacco treatment guidelines, clinicians in LMICs could be trained at a minimum to screen patients for tobacco use and provide brief advice. A potential barrier to achieving this, however, is the clinicians' own tobacco use (168-172).

CHAPTER 4: Addressing tobacco use among HCWs in national tobacco treatment guidelines

4.1 Introduction

The WHO Code of Practice on Tobacco Control for Health Professionals (202) recognise the role of health professional organisations in tobacco control and state that HCWs are expected to be role models for health behaviour and promote smoke-free hospitals and other health care facilities. The Article 14 guidelines further emphasise that national tobacco treatment guidelines should stress the importance of HCWs setting an example by not using tobacco and recommend specific programmes promoting cessation and offering treatment for HCWs who use tobacco (132).

Among the limitations of the survey described in Chapter 3 were that the guideline documents were not accessed directly and their content not examined for specific recommendations concerning the role of HCWs in tobacco treatment because of limitations on the number of questions in the survey.

4.2 Aims

The aim of this chapter was to access national treatment guidelines identified in the guideline survey and examine their content for recommendations concerning tobacco use among HCWs and provision of cessation support for HCWs who use tobacco.

4.3 Methods

Guideline documents were searched for by using web links provided by survey contacts in the guidelines survey and through independent web searches in English, French and Spanish. Individual guideline documents were downloaded and reviewed to establish the publishing body, year of publishing, language, and length of documents in pages. The title and content page of documents written in languages other than English were translated with help from native speakers, wherever possible, or Google translate. The individual documents were then examined to ascertain whether they contained any of the following recommendations: 1) HCWs are role models and should set an example by not using tobacco; 2) recommend smokefree hospital policy; 3) recommend cessation support to HCWs who use tobacco. Descriptive statistics by country World Bank income level were used to summarise the findings. .

For countries that have more than one version of guidelines, the most recent one was reviewed. For countries that have guidelines for different HCWs professionals, settings and populations, the most comprehensive version was reviewed even if it was not the most recent one.

4.4 Results

4.4.1 National guidelines accessed online

Of the 61 national guidelines reported in the guideline survey, 47 (77%) were available to access online (Table 4.1). The guidelines not accessed included those published as a report or book (n=10) and four that could not be located.

The guidelines available online were of HIC (n=33, 70%), UMIC (n=9, 20%), and LMIC (n=5, 10%). There were no low income countries whose guidelines were published online.

The website guidelines were published included government websites (n= 25 54%), health professional associations websites (n=14, 30%) and academic journals (n=8, 17%). The guideline documents were written in English (n=2, 46%), Spanish (n=5, 11%), French (n=4, (9%),

and 17 (37%) in other languages. 21 (45%) were published between 2000 and 2010, and 26 (57%) after 2010. The length of the documents ranged from five pages (the Swiss guidelines) (203) to 276 pages (the US guidelines) (46). The median number of pages was 44.

Table 4.1 National tobacco treatment guidelines available online

Country	WB income level	Accessed online from	Year published	Language	Pages
Argentina	HIC	Ministry of Health (204)	2016	Spanish	56
Armenia	UMIC	Report/book not accessed.			
Australia	HIC	Royal Australian College of General Practitioners (RACGP) (205)	2014	English	83
Austria	HIC	Central European Journal of Medicine (206)	2010	German	17
Bahrain	HIC	Report/book not accessed.			
Bosnia and Herzegovina	UMIC	Report/book not accessed.			
Belgium	HIC	La Société Scientifique de Médecine Générale (SSMG) (207)	2005	French	56
Brazil	UMIC	Brazilian Journal of Pulmonology (208)	2008	English	36
Brunei Darussalam	HIC	Ministry of Health (209)	2014	English	58
Canada	HIC	The Canadian Medical Association(210)	2011	English	64
Chile	HIC	Tobacco Free Chile (211)	2003	Spanish	75
China	UMIC	National Health and Family Planning Commission of the People's Republic of China (212)	2015	Chinese	15
Czech Republic	HIC	Vnitr Lek Journal of the Czech Medical Association (213)	2015	Czech	13
Denmark	HIC	National Board of Health (214)	2011	Danish	68
El Salvador	LMIC	Report/book not accessed.			
England	HIC	Thorax (50)	2000	English	13
Estonia	HIC	National Institute for Health Development (215)	2010	Estonian	44
Finland	HIC	The Finnish Medical Society (216)	2012	Finnish	17
France	HIC	The French National Authority for Health (HAS) (217)	2014	French	59
Georgia	LMIC	Society for the Study of Addiction (218)	2010	Georgian	43
Germany	HIC	Association of Scientific Medical Societies AWMF (219)	2015	German	246
Greece	HIC	Not accessed.			
India	LMIC	Ministry of Health &Family Welfare (220)	2011	English	31
Iran	UIC	Not accessed.			
Italy	HIC	Ministry of Health (221)	2008	Italian	48

Japan	HIC	Japanese Circulation Society Journal (222)	2012	English	20
Jordan	UMIC	King Hussein Cancer Foundation (223)	2014	English	68
Kyrgyzstan	LMIC	Society for the Study of Addiction SSA (224)	2004	English	17
Latvia	HIC	Report/book not accessed.			
Malaysia	UMIC	Society for the Study of Addiction (225)	2003	English	48
Malta	HIC	Report/book not accessed.			
Mexico	UMIC	National Centre of Excellence in Health Technology (CENETEC) (226)	2012	Spanish	66
Montenegro	UMIC	Institute of Public Health (227)	2009	Croatian	40
Morocco	LMIC	Ministry of Health (228)	2013	French	25
Netherlands	HIC	Dutch Partnership on Smoking Cessation (229)	2006	English	170
New Zealand	HIC	Ministry of Health (230)	2014	English	7
Northern Ireland	HIC	The Public Health Agency (231)	2011	English	6
Norway	HIC	Directorate of Health (232)	2016	Norwegian	37
Pakistan	LMIC	Report/book not accessed.			
Panama	UMIC	Society for the Study of Addiction (233)	2005	Spanish	9
Paraguay	UMIC	Ministry of Public Health (234)	2010	Spanish	33
Poland	HIC	Gazeta Lekarska (235)	2008	Polish	16
Portugal	HIC	Centre for Evidence Based Medicine at the University of Lisbon (CEMBE) (236)	2008	English	107
Romania	UMIC	The Romanian Society of Pulmonology (237)	2010	Romanian	86
Russia	UMIC	Not accessed.			
Scotland	HIC	NHS Health Scotland (238)	2017	English	120
Singapore	HIC	Ministry of Health (239)	2013	English	82
Slovak Republic	HIC	The Slovak Society of General Practitioners (240)	2007	Slovak	28
Slovenia	HIC	National Institute for Public Health (241)	2014	Slovenian	34
Spain	HIC	National Committee for Smoking Prevention (CNPT) (242)	2009	English	49
Sweden	HIC	The National Board for Health and Welfare (243)	2011	Swedish	128
Switzerland	HIC	Revue Médicale Suisse (203)	2015	French	5
Thailand	UMIC	Not accessed.			
Turkey	UMIC	Report/book not accessed.			

Ukraine	LMIC	Ministry of Health of Ukraine (244)	2012	Ukrainian	27
United Arab Emirates	HIC	Dubai Health Authority (245)	2015	English	43
United States of America	HIC	US Public Health Service (46)	2008	English	276
Uruguay	HIC	Society for the Study of Addiction (246)	2009	English	81
Venezuela	UMIC	Report/book not accessed.			
Vietnam	LMIC	Report/book not accessed.			
Wales	HIC	Stop Smoking Wales (247)	2015	English	20

WB=World Bank; HIC=high income countries; UMIC=upper middle income countries; LM=lower middle Income countries.

4.4.2 Recommendations addressing tobacco use among HCWs in 34 national tobacco treatment guidelines

The content of 34 guideline documents written in English and six other languages for which translation was available (Spanish, French, Chinese, Croatian, Slovak and Ukrainian) were examined for recommendations addressing tobacco use in HCWs (Table 4.2). The remaining 13 guideline document written in other languages for which translation was not available (Czech, Danish, Estonian, Finnish, Georgian, German, Italian, Norwegian, Polish, Romanian, Slovenian, and Swedish) were excluded from the analysis. Thus the sample included 34 guideline documents. The distribution by income level was 22 (65% HIC, 8 (24%) UMIC and 4 LMIC (12%). The majority covered HCWs from a variety of settings 82% (n=27), 12% (n=4) were for physicians, 9% (n=3) were for primary care, and one for GP.

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Table 4.2 Addressing tobacco use among HCWs in national tobacco treatment guidelines (n=34)

Country	WB category	Year	Pages (n)	Who are they for?	Stress that HCWs should not use tobacco?	Recommend that hospitals should be smoke-free?	Recommend cessation support for HCWs who use tobacco?
ARGENTINA	HIC	2016	56	HCWs	No	No	No
AUSTRALIA	HIC	2014	83	HCWs	No	No	No
BELGIUM	HIC	2005	56	GP	No	No	No
BRAZIL	UMIC	2008	36	HCWs	Yes	Yes	Yes
BRUNEI DARUSSALAM	HIC	2014	58	HCWs	Yes	No	No
CANADA	HIC	2011	64	HCWs	No	No	No
CHILE	HIC	2003	75	Primary care	Yes	NA	No
CHINA	UMIC	2015	15	HCWs	Yes	Yes	No
ENGLAND	HIC	2000	13	HCWs	No	Yes	No
FRANCE	HIC	2014	59	HCWs	No	No	No
INDIA	LMIC	2011	33	HCWs	No	No	No

JAPAN	HIC	2012	20	HCWs	Yes	Yes	No
JORDAN	UMIC	2014	68	HCWs	No	No	No
KYRGYZSTAN	LMIC	2004	17	Physicians	No	No	No
MALAYSIA	UMIC	2003	48	Physicians	No	Yes	No
MEXICO	UMIC	2012	66	HCWs	No	No	No
MONTENEGRO	UMIC	2009	40	Physicians	No	No	No
MOROCCO	LMIC	2013	25	Primary care	Yes	NA	No
NETHERLANDS	HIC	2006	170	HCWs	No	No	No
NEW ZEALAND	HIC	2014	7	HCWs	Yes	No	Yes
NORTHERN IRELAND	HIC	2011	6	HCWs	No	No	No
PANAMA	UMIC	2005	9	HCWs	No	No	No
PARAGUAY	UMIC	2010	33	HCWs	No	Yes	No
PORTUGAL	HIC	2008	107	HCWs	No	No	No
SCOTLAND	HIC	2017	120	HCWs	No	No	No
SINGAPORE	HIC	2013	82	HCWs	No	No	No
SLOVAK REPUBLIC	HIC	2007	28	Physicians	No	No	No

SPAIN	HIC	2009	49	HCWs	Yes	No	Yes
SWITZERLAND	HIC	2015	5	HCWs	Yes	No	No
UKRAINE	LMIC	2012	27	HCWs	No	No	No
UAE	HIC	2015	43	HCWs	No	No	No
USA	HIC	2008	276	HCWs	Yes	Yes	Yes
URUGUAY	HIC	2009	81	HCWs	Yes	No	No
WALES	HIC	2015	20	HCWs	No	No	No

WB=World Bank; HCWs=healtrhcare workers; HIC= high income countries; UMIC=upper middle income countries; LMIC=lower middle income countries.

Overall, just less than one third of guidelines contained statements that HCWs should not use tobacco (n=11, 32%). This was the case in nearly half of HIC guidelines (n=8), and quarter of UMIC guidelines (n=2) and LMIC guidelines (n=1) (Table 4.3).

Only 21% (n=7) of guidelines stated that hospital premises should be smoke-free, including 15% (n=3) HIC and half (n=4) of UMIC guidelines. No LMIC guidelines contained recommendations for smoke free hospitals.

Cessation support for HCWs who use tobacco was recommended in 12% (n=4) of guidelines, 15% (n=3) of HIC and 13% (n=1) of UMIC. No LMLIC guidelines contained this recommendation.

Table 4.3 Guidelines recommendations concerning tobacco use among HCWs by WB country income level

Guidelines recommendations	**% Yes** (n)			
	All (34)	**HIC** (21)	**UMIC** (8)	**LMIC** (4)
HCWs should not use tobacco	**32** (11)	**38** (8)	**25** (2)	**25**(1)
Hospitals should be smoke-free	**21** (7)	**15** (3)	**50** (4)	0
Cessation support for HCWs who use tobacco	**12** (4)	**15** (3)	**13** (1)	0

WB=World Bank; HCWs = healthcare workers; HIC = high income countries; UMIC = upper middle income countries; LMIC = lower middle income countries.

4.5 Discussion

4.5.1 Main findings

Around three quarters (n = 47) of national tobacco treatment guidelines were available to access online. The majority of guidelines accessed online were of HIC and UMIC, were published on government websites and were written in English, Spanish and French. Of the documents whose content was examined (n=34), about one third contain statements that HCWs should not use tobacco, 21% recommend smokefree hospitals and only 12% recommend tobacco cessation support for HCWs who use tobacco. The majority of LMIC did not contain recommendations concerning smokefree hospitals and cessation support for HCWs who use tobacco, and only one (Morocco) stated that HCWs should not use tobacco. Overall, only two countries' guidelines (Brazil and the US), contained all three recommendations.

The number of guidelines accessed online is consistent with the findings of the guidelines survey that 74% were published online. The distribution of guidelines by income level also corresponds to the survey findings that the majority of countries that published tobacco treatment guidelines were HIC and UMIC.

The FCTC Article 14 guidelines recommend that countries develop and disseminate national tobacco treatment guidelines. There are no specific recommendations about the format or content of the guidelines or where the guidelines should be published, however in order to be effective they must be easily accessible. There was a large variation in the length of the guideline documents, from 5-6 pages (Switzerland, New Zealand) to hundreds of pages (US, Germany, The Netherlands, Portugal, and Sweden). Whilst a comprehensive review of scientific evidence is an important part of producing and updating the guidelines evidence base, a document which is excessively long is unlikely to be widely used. A shorter version with key recommendations, like the New Zealand guidelines, may be a more effective way of making them easily accessible by busy practitioners.

As this study showed, nearly three quarters of guidelines can be accessed from national government websites or academic journals. Only one quarter were available on health professional associations' websites. It is important for guidelines to be easily accessible by all HCWs; while publishing guidelines on government websites is an endorsement of their official status and guidelines published in journals are peer-reviewed, they may not be easily accessible to the target population. Publishing guidelines on health professional websites could help to disseminate them to wider audiences of HCWs. The use of electronic media and new technology could also increase the

accessibility of guidelines and offer an affordable way of dissemination (248).

Inspection of guideline content showed that only a minority of HIC and UMIC guidelines contained statements that HCWs should not use tobacco, and very few recommended smoke-free hospital policy for both patients and HCWs recommended cessation programmes for HCWs who use tobacco. This omission of statements that HCWs should not use tobacco suggests that HCWs smoking may not be perceived as a barrier to providing cessation support to patients. However, research evidence shows that physicians who use tobacco are less likely to initiate cessation interventions (249) and have more favourable attitudes towards smoking than their non-smoking colleagues(250). Physicians who smoke differ in their knowledge and attitudes towards smoking from non-smokers, for example they rate risks of smoking and benefits of quitting lower, and they are less likely to engage in stop-smoking advice (251, 252). HCWs who are smokers are less likely than never-smokers to ascertain patients' smoking status, give advice to quit or deliver cessation counselling (253, 254). Smoking among HCWs has been reported to be a major barrier to the implementation of smoke-free policy in hospitals and non-compliance with smoking restriction on hospital premises (255-258) and smoking in front of patient (255, 257, 259). As the majority of tobacco treatment guidelines are policy documents endorsed by national health

professional associations, it is paramount that they emphasise the importance of their members to be smoke-free.

It is equally important that guidelines recommend cessation support and specific cessation programmes for HCWs who are tobacco dependent. HCWs who smoke are not different from other smokers and quitting without cessation support is more difficult and has low success rates. Furthermore, HCWs who use tobacco may not seek professional help (208). However, as these findings suggest, such programmes targeting these groups are extremely rare. Studies have reported that although the majority of hospital personnel who smoked wanted to quit there was little knowledge or cessation support available (260-264). Also, lack of cessation support for HCWs who smoke can seriously undermine the success of introducing smoke-free policy in healthcare settings (265). While the lack of recommendations for cessation programmes for HCWs in the guidelines may reflect the general lack of cessation support in countries with underdeveloped tobacco treatment infrastructure, it is important for the guidelines to promote smoking cessation support for HCWs.

Finally, it was found that only a minority of guidelines recommend smoke-free hospitals. While hospitals and healthcare facilities may be covered by separate smoke-free legislation, it is important that these recommendations are also stated in the tobacco treatment guidelines. It has been shown that smoke-free work places can encourage changes

in smoking behaviour (266) and studies assessing impact of implementation of smoke-free policy in healthcare settings showed that when the smoking bans were combined with cessation support, the prevalence of smoking among both patients' and staff decreased (267, 268).

4.5.2 Strengths and limitations

To date, there has been no research investigating accessibility and national tobacco treatment guidelines content for recommendations addressing tobacco use in HCWs. The guidelines not accessed online were those produced as hard copy (reports or books) and these hard copies were not assessed as part of this study and so the content of these guidelines has not been examined in this study. Thirteen guidelines (11 HIC, one UMIC and one LMIC) were written in languages for which translation was not available, and were therefore not assessed.

For countries with a set of guidelines documents aimed at different health care professionals, settings or populations of smokers, it was not possible to review all of them. In such cases the most comprehensive version was used rather than the most recent one.

The majority of documents were accessed through independent searches and in some cases an earlier version than that provided by the survey contacts were accessed. This may account for some discrepancy between the responses provided in the survey and the actual guidelines content.

The absence of smokefree recommendations in guidelines is not necessarily an indication of a lack of smokefree policy. Given the number of countries passing smokefree laws over the last decade, it is possible that in some countries hospitals are covered as part of national smokefree legislation and regulations. However, many countries only have partial smokefree laws, and in many cases prohibiting smoking in hospitals would require a separate policy.

4.5.3 Conclusions

The majority of tobacco treatment guidelines (75%) were available online, however this was not always in a location easily accessible by HCWs. Consideration should be given to the location of publication of guideline documents to maximise their potential for use as an effective working document to support the implementation of Article 14. The same is true for the content of these documents, both in terms of length and clarity.

Only a minority of tobacco cessation guidelines contain recommendations that address tobacco use in HCWs. As a policy document which aims to reduce smoking and promote tobacco dependence treatment, the guidelines could be used more effectively as a tool to promote smoking cessation among HCWs and smokefree healthcare settings.

CHAPTER 5: A systematic review of prevalence of tobacco use in HCWs

5.1 Introduction

HCWs own smoking status is important as they are at the forefront of helping tobacco users to quit and they should set an example by not using tobacco. As described in Chapter 1, previous reviews of literature have reported wide variations in smoking prevalence among health professionals around the world. As the tobacco epidemic is moving towards low and middle income countries, the prevalence rates among HCWs may also be on the rise.

5.2 Aims

The aim of this chapter was to systematically review scientific literature that report tobacco use in any HCW population and country, and to provide estimates of tobacco use by gender, occupation and country income level.

5.3 Methods

The study conforms to the PRISMA Statement for Reporting Items for Systematic reviews and Meta-Analysis) (269) and GATHER (Guidelines for Accurate and Transparent Health Estimates Reporting) (270). The review protocol is available to access from PROSPERO database of systematic reviews, Registration Number CRD42016041231.

5.3.1 Eligibility criteria

All primary studies from any country and in any language that reported tobacco use in healthcare populations directly involved in the delivery of healthcare services to patients (physicians, nurses, dentist, pharmacists, and allied health personnel), were eligible for inclusion in the review.

5.3.2 Search strategy

Five electronic databases, including Medline (1996 – present via Ovid) and Embase (1980 – present via Ovid), CINHAL Plus with Full Text (1981- present), CAB Abstracts (1973 – present) and LILACS (1985 - present), and the WHO Global Health Observatory data repository were searched for studies published from January 2000 to March 2016. The latest search was run on 14 March 2016. A search strategy was developed for each database with a combination of free text and

controlled vocabulary (ie, MeSH terms) in consultation with an information specialist (librarian). Search terms included ‘physician’, ‘general practitioner’, ‘medical doctor’, ‘nurse’, ‘pharmacist’, ‘dentist’, combined with terms for tobacco use and tobacco, such as ‘’smoking’, ‘tobacco’, ‘cigar*, ‘shisha’, ‘water pipe’, ‘smokeless tobacco’, adapted for each database. An example of search terms used for Medline database is available in Appendix IV. Reference lists of publications retrieved in database searches and relevant review papers were also screened for relevant studies. There were no restrictions on country, language and type of studies eligible for inclusion.

5.3.3 Study selection

Title and abstract screening were performed by the author and a senior researcher independently; supplicates and records that did not meet eligibility criteria were excluded at that stage. The full text of potentially eligible abstracts was retrieved, and those that could not be accessed or translated were excluded. Conference abstracts that contained relevant data were included.

5.3.4 Data extraction

The data extraction was performed independently by the author, and two senior researchers. Variables of interest included author, year of data collection, country, profession, setting, number of participants, sex, occupation, study response rate, tobacco use (self-reported or biochemically verified), type of tobacco, number of current tobacco users.

The following categories were used for tobacco users: current, former, ever and never users. Occasional tobacco users were included under current user category in the analysis. Studies that reported combined prevalence for more than one occupational category, or unspecified HCWs or mixed hospital personnel, were assigned as mixed HCWs category. Studies that included healthcare professionals who were not medical doctors, dentists, nurses or pharmacologists were included under allied HCWs category.

Studies with prevalence data for two or more defined HCWs categories, year or country, were extracted multiple times. When there were multiple studies with prevalence data from the same cohort, only one study per cohort was included, selected on the basis of the study sample size and its overall quality. For studies that did not specify sample size the median sample size calculated from all studies was used. Where studies did not specify the year of data collection, the year before the study was published was assigned. Duplicates and full text

studies that contained prevalence data prior to 2000 were excluded from the review.

5.3.5 Quality assessment

The quality of studies was assessed by the author and two senior researchers independently using a standardized data extraction and quality assessment form (Appendix IV), against 9 criteria, worth 1 point each, equally weighted. The criteria included selection and representativeness of the study population, participants' response rate, reporting and measuring of tobacco use, study funding and conflict of interest. The study data and scores were reviewed and any disagreements resolved through discussion between reviewers.

5.3.3 Statistical analyses

The selected studies were grouped by country income level according to the WB income classification for July 2016 fiscal year: high income countries (HIC), upper middle income countries (UMIC), lower middle income countries (LMIC) and low income counties (LIC). Due to a low number of studies from LMIC and LIC they were combined under lower middle income and low income countries (LMLIC) category. Random effect meta-analyses were conducted to obtain pooled prevalence

estimates by WB income level with 95% Confidence Interval (CI). Heterogeneity between studies was assessed using the I2 statistic. All analyses were conducted in Stata 14.

The principal summary measures used in meta-analysis included overall prevalence of tobacco use, prevalence in male and female HCWs, overall and gender prevalence by occupation and country income level.

Subgroup analyses by occupation, gender, quality score (grouping studies below and above the mean score) and the year of data collection (2000-2005, 2006-2010 and 2011-2014) were performed to explore the effects of heterogeneity on prevalence.

5.4 Results

5.4.1 Study selection procedure

Database searches and previous systematic review reference lists searches identified 12660 records (Figure 5.1). After removing 564 duplicates records, 12096 titles and abstracts were screened for eligibility of which 374 studies were eligible for full text screening. Of these, 149 were excluded due to full text not being found (40 studies),

foreign language studies (13 studies), irrelevant data (33 studies), data collected before the year 2000 (26 studies), repeated data (15 studies), same study population (13 studies), systematic reviews (8 studies), and no country specified (1 study). Hence, 225 studies were eligible for inclusion in the review, 57 of which contained prevalence data on more than one category of HCWs or from more than one year, and were extracted separately, thus the total number of data records in the meta-analyses was 282 (255-257, 260-263, 271-488) (489).

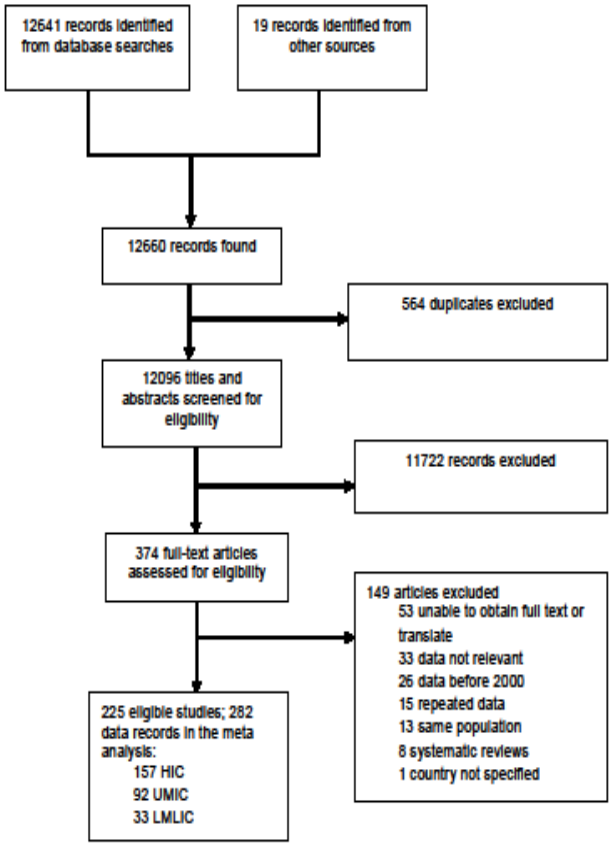


Figure 5.1 Study selection procedure

5.4.2 Summary of studies

The studies in the review included observational data from 67 countries, of which 33 were HIC, 21 UMIC and 13 LMLIC. Study sample sizes ranged from 32 to 102,635, with a median sample size of 377, representing 446,693 HCWs in total. Years of data collection ranged from 2000 to 2014; 115 included data from 2000- 2005, 99 included data from 2006-2010, and 68 from 2011-2014. The categories of HCWs included medical (119 studies) nursing (62 studies), dental (12 studies), pharmacy (5 studies), allied (13 studies) and mixed (71 studies) (Table 5.1). The type of tobacco use reported in 98% of studies was cigarette smoking, three studies reported water pipe smoking (324, 366, 367), and three smokeless tobacco (295, 347, 473).

The mean quality score of studies was 4·1 (SD 1·60) out of a possible maximum of 9; studies from LMLIC had the highest average quality score 4.24 (SD1·15) and those from UMIC the lowest 3·78 (SD 1·40).

Table 5.1 Summary table of data by year of data collection, HCWs occupation and WB country income level

WB category	Studies (n)	Countries (n)	HCWs included						Year data collection			Average Quality Score (Std. Dev.)
			Medical	Nursing	Allied	Dental	Pharmacy	Mixed	2000-2005	2006-2010	2011-2014	
ALL	282	67	119	62	13	12	5	71	115	99	68	4.10 (1.60)
HIC	157	33	59	46	8	5	4	35	77	45	35	4.21 (1.76)
UMIC	92	21	44	15	2	5	1	25	31	39	22	3.78 (1.40)
LMLIC	33	13	16	1	3	2	0	11	7	15	11	4.24 (1.15)

HCWs = health care workers; WB= World Bank; HIC=high income countries; UMIC=upper middle income countries; LMLIC=lower middle and low income countries.

Overall, most studies had a clearly defined study population (86%), stated the study period (79%) and used anonymous survey methods (68%); however, the majority of studies lost points on quality criteria assessing participant selection (only 33% had a representative sample and 39% used a probability sampling approach), participant response rate (only 35% had a response rate of 70% or above), and the quality of tobacco use data (only 40% clearly defined and measured tobacco use) (Table 5.2).

Individual studies and quality scores are summarized in Tables 5.3, 5.4 and 5.5.

Table 5.2 Summary of study quality score

Quality score criterion, %	Overall	HIC	UMIC	LMLIC
Study population clearly defined	86	84	87	91
(*Categories of HCs clearly stated)*				
Representative sample	33	38	29	21
(*A clear sampling frame; participants drawn from more than one setting)*				
Response rate >70%	35	28	40	55
(*The number of valid responses as a % of all participants in the survey*)				
Study period defined	79	78	79	85
(*The year/s of data collection clearly stated*)				
Tobacco use clearly defined and measured	40	44	36	36
(*Type of tobacco defined, current/former/never user defined)*				
Random selection of participants	39	43	34	30
(*Probability sampling approach used)*				
Self-administered anonymous survey	68	76	55	70
(*An anonymous data collection method used rather than face to face, interview etc*)				
Biochemical measurements	0.4	0	0	3
(*Smoking status biochemically verified e.g. measuring CO or cotinine*)				
Research funding and conflict of interest	20	26	10	18
(*Declaration of conflict of interest and funding included*)				

HIC=high income countries; UMIC=upper middle income countries; LMLIC=lower middle and low income countries.

Table 5.3 Summary of studies in lower middle and low income countries (LMLIC)

Author	Country	Year data collected	HCW Category	Type of tobacco use	Study quality score	Sample size	Tobacco use (%)
Adraneda[269]	Philippines	2014	Medical	Cigarettes	3	557	27·8
Ammar[251]	Tunisia	2010	Mixed	Cigarettes	4	570	24·8
Bansal[281]	India	2011	Medical	Cigarettes	2	202	22
Chandrashekar[299]	India	2006	Dental	Cigarettes	5	114	4·4
Chaudhry[301]	Pakistan	2006	Mixed	Cigarettes	5	300	28
Fakhfakh[322]	Tunisia	2005	Mixed	Cigarettes	5	796	9·4 (F)
Ketkar[355]	India	2012	Mixed	Cigarettes	3	247	7
Kumar[362]	Pakistan	2011	Medical	Water pipe	3	343	29·5
Kumar[363]	Pakistan	2014	Medical	Cigarettes	3	786	16·3
Malik[373]	Pakistan	2009	Medical Allied	Cigarettes	6	234 207	37·2 35·7
Memon[386]	Pakistan	2008	Medical	Cigarettes	4	45	22·2

			Allied				11·8
Mitra[390]	India	2013	Dental	Cigarettes	4	500	10
Movsisyan[393]	Armenia	2009	Medical Nursing	Cigarettes	5	93 112	37·6 7
Nawaz[396]	Pakistan	2006	Medical	Cigarettes	4	227	36
Ng[399]	Indonesia	2003	Medical	Cigarettes	5	447	11·6
Ngahane[400]	Cameroon	2010	Medical	Cigarettes	3.5	192	3·6
Nollen[401]	Nigeria	2002	Medical	Cigarettes	3	373	3
Pati[411]	India	2013	Medical	Cigarettes	3	91	13·2
Paudel[412]	Nepal	2012	Mixed	Cigarettes	2	500	6
Perrin[416]	Armenia	2004	Medical	Cigarettes	5.5	238	34
Pokhrel[418]	Nepal	2005	Mixed	Not specified	5	377	20·4
Salah[253]	Tunisia	2008	Mixed	Cigarettes	4	452	19
Shelley[446]	Vietnam	2012	Mixed	Cigarettes	5.5	114	9·7
Touré[463]	Senegal	2004	Medical Allied	Cigarettes	4	96 153	13·5 10·5

Touré[464]	Senegal	2007	Mixed	Cigarettes	4.5	662	12·8
Valliani[469]	Pakistan	2009	Mixed	Smokeless tobacco	6	560	48·6
Vanphanom[471]	Laos	2007	Medical	Cigarettes	6	855	9·2
Zafar[478]	Pakistan	2013	Mixed	Cigarettes	4	180	29·4
Zakaria[479]	Syria	2011	Medical	Cigarettes	3	466	24

HCWs= healthcare workers; (M)=male; (F)=female.

Table 5.4 Summary of studies in upper middle income countries (UMIC)

Author	Country	Year data collected	HCW Category	Type of tobacco use	Study quality score	Sample size	Tobacco use (%)
Abrizah[267]	Malaysia	2009	Dental	Cigarettes	4	490	12·7
Akvardar[271]	Turkey	2003	Medical	Cigarettes	3	153	37·9
Amiri[274]	Iran	2007	Medical	Cigarettes	5	218(M) 258 (F)	37·4(M) 1·2 (F)
An[275]	China	2012	Nursing	Cigarettes	7	94(M) 705 (F)	46·7(M) 3·4 (F)
Aydin[277]	Turkey	2012	Medical	Cigarettes	1	678(M) 507 (F)	31·6(M) 37·3 (F)
Balbani[279]	Brazil	2005	Medical	Cigarettes	5	209	7·1
Baltaci[280]	Turkey	2014	Medical	Cigarettes	3	261	29·1
Barbosa[282]	Brazil	2008	Mixed	Cigarettes	7	1759	15·7
Bourne[292]	Jamaica	2008	Mixed	Cigarettes	5	212	4·7
Cakir[294]	Turkey	2005	Mixed	Cigarettes	5	883	34·2
Calgan[295]	Turkey	2006	Pharmacy	Cigarettes	4.5	83	38·6
Ceraso[297]	China	2006	Medical	Cigarettes	4	103 (M)	49·5 (M)

Chan[298]	China	2003	Nursing	Cigarettes	6	1690	2·2
Custodio[307]	Brazil	2008	Nursing	Cigarettes	3	130	35·4
Demir[309]	Turkey	2011	Medical	Cigarettes	5	263	25·4
Demiralay[310]	Turkey	2001	Medical	Cigarettes	6	401	43·4
Demiralay[311]	Turkey	2001	Medical	Cigarettes	2	135	33·7
Echer[317]	Brazil	2008	Mixed	Cigarettes	5	848	11·8
Gigliotti[332]	Argentina	2011	Medical	Cigarettes	4	448	20·1
Günay[336]	Turkey	2009	Medical	Cigarettes	4	116	53·4
Gunes[337]	Turkey	2002	Medical	Cigarettes	4	257	37·4
Han[338]	China	2012	Mixed	Cigarettes	2	3787	15·5
He[339]	China	2011	Medical	Cigarettes	5	876	24·2
Hidalgo[341]	Colombia	2011	Medical	Cigarettes	3	38	50
Hodgetts[344]	Bosnia & Herzegovina	2002	Mixed Medical Nursing	Cigarettes	5.5	205 110 95	45 40 51
Jardim[346]	Brazil	2008	Medical	Cigarettes	4	72	5·6
Jiang[347]	China	2004	Medical	Cigarettes	5.5	1958(M) 1594 (F)	41(M) 1(F)

Karahan[351]	Turkey	2005	Mixed	Cigarettes	2.5	1600	37·4
Kheradmand[357]	Iran	2014	Mixed	Cigarettes	3	524	21·2
Lazovic[258]	Serbia	2006	Mixed	Cigarettes	3	462	47·2
Li[366]	China	2005	Medical	Cigarettes	3	267	36·8
Li[367]	China	2009	Medical	Cigarettes	3	432(M) 568 (F)	37·5(M) 0·4(F)
Li[368]	China	2011	Medical	Cigarettes	5	805(M) 768 (F)	27·9(M) 0·5(F)
Lindo[370]	Jamaica	2003	Medical Nursing Mixed	Cigarettes	5	99 113 212	4·2 3·5 5·1
Lisanti[485]	Argentina	2012 2004	Mixed	Cigarettes	2	263	26·7 36·3
Lopez-Maya[371]	Mexico	2011	Medical	Cigarettes	4	258	21·7
Man[375]	Romania	2009	Medical	Cigarettes	3	50	40
Mansour[376]	Lebanon	2001	Medical	Cigarettes	4	171	27·7 (M)
Marin[378]	Argentina	2006	Mixed	Cigarettes	3	1960	31·8
Marochi[379]	Brazil	2012	Medical	Cigarettes	2	32	3·2
Maryana[381]	Malaysia	2009	Dental	Cigarettes	2	720	13·8
Mejia[385]	Argentina	2005	Medical	Cigarettes	4.5	235	35·3

Merrill[387]	Jordan	2006	Medical	Cigarettes	4	251	19
Nekhoroshev[398]	Russia	2002	Medical	Cigarettes	4	1571	26
Ocampo-Ocampo[402]	Mexico	2000	Mixed	Cigarettes	1	659	28
Okeke[403]	South Africa	2009	Medical Nursing Allied	Cigarettes	5	94 276 156	11·7 8 16
Oliveira[404]	Brazil	2004	Allied	Cigarettes	3	194	17
Ozturk[407]	Turkey	2014	Medical	Cigarettes	4	151	15·9
Peng[413]	China	2012	Medical	Cigarettes	5	420	12·4
Pourmahabadian[420]	Iran	2002	Mixed	Cigarettes	2	124	38·7
Pretto[422]	Brazil	2012	Mixed	Cigarettes	2	340	5
Prucha[425]	Dominican R	2011	Mixed	Tobacco	4	107	3·7
Retief[429]	South Africa	2002	Nursing	Cigarettes	3	80	31·3
Rodrigues[431]	Brazil	2004	Dental	Cigarettes	5	234(M) 212 (F)	42(M) 31·4(F)
Saavedra[433]	Peru	2009	Nursing	Cigarettes	4	204	3
Saglam[259]	Turkey	2008	Medical Nursing Mixed	Cigarettes	2.5	169 260 691	18·7 34 36·9

Sahebi[435]	Iran	2006	Mixed	Cigarettes	2	1027	5·7
Sanchez[439]	Ecuador	2002	Medical	Cigarettes	5	509(M) 170 (F)	35·2(M) 24·1(F)
Santos[442]	Brazil	2011	Medical	Cigarettes	2	447	5·1
Shi[447]	China	2009	Medical	Cigarettes	4	256(M) 211 (F)	18·4(M) 3·9(F)
Simonetti[449]	Brazil	2005	Nursing	Cigarettes	2	235	13
Smith[452]	China	2005	Mixed	Cigarettes	4	315	10·5
Smith[453]	China	2008	Medical	Cigarettes	4.5	84(M) 102 (F)	46(M) 5·3 (F)
Sonmez[454]	Turkey	2014	Medical Nursing	Cigarettes	4.5	1182 1063	34·4 30·7
Sousa[455]	Brazil	2006	Mixed	Cigarettes	2	207	63
Souza[456]	Brazil	2011	Nursing	Cigarettes	1	50	12
Suarez[458]	Cuba	2007	Nursing Dental Mixed	Cigarettes	4	318 60 343	38·4 33·3 35·6
Sun[459]	China	2008	Medical	Cigarettes	3.5	732(M) 923 (F)	30·2(M) 0·3 (F)
Torres[461]	Brazil	2007	Medical	Cigarettes	4	1202	32·7
Velasco-Contreras[472]	Mexico	2009	Medical Nursing Mixed	Tobacco	3	3603 2581 19532	23·3 38·7 39·2

Viegas[473]	Brazil	2005	Medical	Cigarettes	5	830	7·2
Villarroel[474]	Venezuela	2007	Dental	Cigarettes	1	293	10·8
Yan[477]	China	2008	Mixed	Cigarettes	6	297(M) 339 (F)	43(M) 1·2 (F)
Zhou[481]	China	2007	Medical	Cigarettes	7	493(M) 180 (F)	35(M) 3 (F)
Zylbersztejn[482]	Argentina	2002	Medical	Cigarettes	2	783	28·6
Zylbersztejn[483]	Argentina	2004	Medical	Cigarettes	4	6497	30

HCWs= healthcare workers; (M)=male; (F)=female.

Table 5.5 Summary of studies in high income countries (HIC)

Author	Country	Year data collected	HCW Category	Type of tobacco use	Study quality score	Sample size	Tobacco use (%)
Adamek[268]	Poland	2011	Nursing	Cigarettes	3	73 (F)	40 (F)
Akpanudo[270]	USA	2005	Medical	Cigarettes	5	352	2·3
Al-Arifi[272]	Saudi Arabia	2003	Pharmacy	Cigarettes	6	261	19·9
Al-Lawati[273]	Oman	2001	Medical	Cigarettes	6	1191	11
Arack[252]	England	2007	Mixed	Cigarettes	4	160	19·5
Awan[276]	Saudi Arabia	2013	Dental	Cigarettes	4	130	33·8
Azzopardi[278]	Malta	2011	Mixed	Cigarettes	3	3600	27·1(M) 24·8 (F)
Bazargan[283]	USA	2008	Medical	Cigarettes	5.5	763	6
Beaujouan[284]	France	2001	Medical	Cigarettes	6	3428	22·7
Beletsioti-Stika[285]	Greece	2002	Nursing	Cigarettes	7	308	46
Bello[286]	Chile	2001	Medical Nursing Mixed	Cigarettes	4	1576 1326 20848	30·5 35·8 40·7
Beltrán[287]	Spain	2004	Pharmacy	Cigarettes	5	401	36·9

Berkelmans[288]	Australia	2007	Nursing	Cigarettes	7	58(M) 965 (F)	22·4(M) 10·4 (F)
Boado[289]	Uruguay	2011	Medical	Cigarettes	4	268(M) 333 (F)	46·3(M) 38·7 (F)
Bolinder[290]	Sweden	2001	Medical	Cigarettes	4	1094	6
Bolinder[291]	Sweden	2006	Medical	Cigarettes Snus	6	1079	3 7
Burgos Díez[293]	Spain	2010	Mixed	Cigarettes	2	554	23
Carel[296]	Israel	2012	Nursing	Cigarettes	5	505	24·5
Chang[300]	Taiwan	2005	Pharmacy	Cigarettes	6	192(M) 577 (F)	18(M) 0·5 (F)
Connolly[302]	New Zealand	2012	Nursing	Cigarettes	2	104	30
Cookson[303]	England	2013	Mixed	Cigarettes	6	144	45
Copertaro[304]	Italy	2005	Nursing	Cigarettes	3	128(M) 134 (F)	32(M) 23·1 (F)
Copertaro[305]	Italy	2007	Medical	Cigarettes	3	128(M) 286 (F)	35(M) 23 (F)
Cuesta[306]	Uruguay	2004	Medical Nursing	Cigarettes	2	117 76	24 16
De Col[308]	France	2008	Medical	Cigarettes	6	332	18

Díez Piña[312]	Spain	2004	Nursing Allied	Cigarettes	3	411	37·2 24·4
Donchin[313]	Israel	2000	Mixed Medical	Cigarettes	2.5	345 63	18·6 12·7
Downie[314]	Australia	2013	Allied	Cigarettes	4	283	1
Dwyer[315]	Australia	2008	Nursing	Cigarettes	4.5	88 (M) 201 (F)	21 (M) 13 (F)
Dziankowska-Zaborszczyk[316]	Poland	2008	Nursing	Cigarettes	3	299	18
Edwards[318]	New Zealand	2006	Nursing Medical Mixed	Cigarettes		34896 9885 25083	14·2 3·6 12
Estryn-Behar[319]	France	2002	Nursing	Cigarettes	7	796 (M) 6184 (F)	28·1 (M) 23·8 (F)
Fadhil[320]	Bahrain	2005	Medical	Cigarettes and water pipe	5	120	24
Faggianoi[321]	Italy	2012	Medical	Cigarettes	6.5	1754	12·4
Fathallah[323]	France	2010	Nursing	Cigarettes	7	87 (M) 520 (F)	32·3 (M) 29·8 (F)
Ferraz[324]	Portugal	2009	Nursing	Cigarettes	3	105	16·2

Fink[325]	USA	2011	Allied	Cigarettes	3	263	1.1
Fougere[326]	France	2008	Medical	Cigarettes	3	606	25
Freour[327]	France	2009	Medical	Cigarettes	4	340	12·3
Friis[328]	Denmark	2000	Nursing	Cigarettes	6	22715 (F)	23·4 (F)
Frisinghelli[329]	Italy	2013	Medical	Cigarettes	4	451 (M) 159 (F)	7 (M) 3 (F)
García de Albéñiz[330]	Spain	2000	Nursing	Cigarettes	3	6711	42
Gazdek[331]	Croatia	2011	Medical Nursing	Cigarettes	2	Not specified	19·4 29·4
Giotakis[256]	Greece	2012	Mixed	Cigarettes	2	104	52
Glavas[333]	Croatia	2002	Mixed	Cigarettes	4	104 (M) 207 (F)	36·5 (M) 35·7 (F)
Gowin[334]	Poland	2008	Medical	Cigarettes	2	268	8·3
Grempler[335]	Germany	2007	Mixed	Cigarettes	3	410	34
Hernández[340]	Spain	2003	Nursing	Cigarettes	6	156	22
Hilleshein[342]	Portugal	2010	Nursing	Cigarettes	3	93	8·6
Hjalmarson[343]	Sweden	2003	Allied	Cigarettes	6.5	240 (M)	20 (M)

				Snus		597 (F) 238 (M) 580 (F)	15 (F) 23 (M) 4 (F)
Hung[345]	USA	2013	Medical	Medical	3.5	1000	4
Incorvaia[257]	Italy	2007	Mixed	Cigarettes	2	383	25·8
Jimenez-Ruiz[348]	Spain	2014	Medical Nursing Mixed	Cigarettes	7	416 196 612	11·1 11·4 11·7
Kaiser[349]	Germany	2004	Medical	Cigarettes	4	97	20
Kaneita[350]	Japan	2012 2008 2004 2000	Medical	Cigarettes	7	5854 3486 3633 3771	10·5 11·5 16·2 20·3
Kara-Perz[352]	Poland	2007	Mixed	Cigarettes	2	48	60·4
Kazmi[353]	UK	2008	Mixed	Cigarettes	3.5	195	24
Kenfield[354]	USA	2000	Nursing	Cigarettes	8	102635 (F)	11·7 (F)
Khawaja[356]	USA	2002	Medical	Cigarettes	8	21026 (M)	2·8 (M)
Kim[358]	Korea	2011	Nursing	Cigarettes	6	9989 (F)	1·2 (F)

Kloppe[359]	Spain	2000	Medical	Cigarettes	3	270	18·9
Kobayashi[360]	Japan	2010 2007 2005 2003 2001	Mixed	Cigarettes	2	Not specified	3·7 5·8 7·9 13·9 15·1
Korzybski[361]	Poland	2006	Medical	Cigarettes	5	134(M) 272 (F)	13(M) 9 (F)
Kumbrija[364]	Croatia	2007	Medical Nursing	Cigarettes	4	125 89	26 44
Kuo[365]	Taiwan	2006	Medical Dental	Cigarettes	3.5	491 124	21·6 15·3
Lina[369]	Italy	2011	Medical	Cigarettes	2	285	14
Maksimovic[372]	Australia	2012	Mixed	Cigarettes	4	85	50·6
Malinauskiene[374]	Lithuania	2005	Nursing	Cigarettes	6	748 (F)	19·1 (F)
Mansoura[377]	Qatar	2007	Medical	Cigarettes	5	85 (M) 66 (F)	12·9 (M) 1·5 (F)
Martínez[380]	Spain	2005	Medical Nursing	Cigarettes	4	3896	23.2 36

Masia[382]	Italy	2004	Medical Nursing Allied	Cigarettes	5	606 684 260	21·4 35·5 40·4
Maurel-Donnarel[383]	France	2008	Nursing	Cigarettes	6	84 (M) 370 (F)	28·6 (M) 29·7 (F)
McKenna[384]	Northern Ireland, UK	2000	Nursing	Cigarettes	5	1074	25·8
Michalsen[388]	Germany	2001	Medical	Cigarettes	5	296	47
Mihalopoulos[389]	USA	2007	Medical	Cigarettes	4	53	7
Miyazaki[391]	Japan	2001	Nursing	Cigarettes	7	49927 (F)	17·2 (F)
Moreno[392]	Spain	2014	Mixed	Cigarettes	1	37	28
Moxham[394]	Australia	2012	Nursing	Cigarettes	1	64	18·8
Nappini[395]	Italy	2014	Nursing	Cigarettes	4	42 (M) 205 (F)	33·3 (M) 26·3 (F)
Negro[397]	Italy	2006	Mixed	Cigarettes	2	2689	35
O'Mahony[405]	Ireland	2004	Allied	Cigarettes	1	174	28
Osorio[406]	Chile	2000	Nursing	Cigarettes	4	290	17·6
Packer[408]	England, UK	2013	Medical	Cigarettes	1	87	14

Parkins[409]	Scotland, UK	2011	Mixed	Cigarettes	4	192	7
Pärna[410]	Estonia	2002	Medical	Cigarettes	4.5	465 (M) 2203 (F)	24·9 (M) 10·8 (F)
Pérez[414]	Spain	2013	Mixed	Cigarettes	2	100	18
Pericás[415]	Spain	2005	Nursing	Cigarettes	6	376	26·7
Perry[417]	Australia	2011	Nursing	Cigarettes	5.5	382	18
Poulsen[419]	Denmark	2012	Mixed	Cigarettes	7	7305	36·6
Pretti[421]	Italy	2000	Medical	Cigarettes	6	3571	22·3
Principe[423]	Italy	2000	Mixed	Cigarettes	4	9843	33·3
Proietti[424]	Italy	2004	Medical Nursing	Cigarettes	3	466 1002	27·7 36·3
Pumpe[426]	Germany	2002	Mixed	Cigarettes	4	510	26·9
Rahman[427]	Australia	2012	Medical	Cigarettes	4	1301	6·8
Ravara[428]	Portugal	2009	Medical	Cigarettes	1	226 (M) 381 (F)	29·6 (M) 15·3 (F)
Rius[430]	Spain	2010	Medical	Cigarettes	3	1098	14

Rodríguez[432]	Spain	2003	Medical Nursing	Cigarettes	6	316 266	28 36·2
Saeys[434]	Belgium	2011	Medical	Cigarettes	5	359 (M) 267 (F)	10 (M) 5 (F)
Saika[436]	Japan	2004 2006	Mixed	Cigarettes	3	261 398	6·1 8·5
Sainz[437]	Spain	2006	Mixed	Cigarettes	5	111 (M) 283 (F)	27·9 (M) 35·7 (F)
San Pedro[438]	Spain	2005	Medical	Cigarettes	2	106	35·9
Santa-María[440]	Spain	2004	Medical Mixed	Cigarettes	4	157 220	29·7 45
Santander[441]	Chile	2009	Medical	Cigarettes	3	96 (M) 67 (F)	29·2 (M) 29·9 (F)
Sarna[443]	Czech Rep	2014	Nursing	Cigarettes	4	157 (F)	29·5 (F)
Sarna[444]	USA	2007	Nursing	Cigarettes	8	2566 (F)	12·1 (F)
Schulz[445]	Germany	2003	Medical	Cigarettes	3	329	41
Shkedy[448]	Israel	2012	Medical	Cigarettes	3	53 (M) 37 (F)	18·9 (M) 13·5 (F)

Siqués[450]	Chile	2001	Mixed	Cigarettes	4	176	37
Slater[451]	Northern Ireland, UK	2005	Nursing	Cigarettes	5	86 (M) 988 (F)	38·1 (M) 24·6 (F)
Stubbs[457]	Ireland	2003	Medical Nursing Mixed	Cigarettes	3	19 476 599	0 26·1 22
Tong[443]	USA	2003	Medical Nursing Dental Pharmacy Allied	Cigarettes	7	1245 388 391 403 377	3·5 13·1 5·8 4·4 5·3
Tountas[462]	Greece	2000	Mixed	Cigarettes	2	101 (M) 161 (F)	46 (M) 43 (F)
Tselebis[465]	Greece	2000	Nursing	Cigarettes	2	114 (F)	46 (F)
Uallachain[466]	Ireland	2003	Medical	Cigarettes	4	100	8
Underner[467]	France	2002	Medical	Cigarettes	5	189 (M) 68 (F)	27·6 (M) 20·6 (F)
Uruena[468]	Spain	2001	Medical Nursing	Cigarettes	3	90 121	19 26

Valverde[470]	Spain	2011	Medical	Cigarettes	5	215	19
Vilarroel[474]	Spain Italy	2007	Dental	Cigarettes	1	90 110	51 20
Virtanen[475]	Finland	2004	Mixed	Cigarettes	3.5	8003	22·7
Vitzthum[476]	Germany	2010	Mixed	Cigarettes	5	1835	20
Zapka[480]	USA	2005	Nursing	Cigarettes	4.5	194	5·9
Zysnarska[484]	Poland	2008	Nursing	Cigarettes	2	118	27

HCWs= healthcare workers; (M)=male; (F)=female.

5.4.3 Meta analyses

5.4.3.1 Prevalence of tobacco use by WB country income level

The overall pooled prevalence of tobacco use was 22% and varied by income level (p=0.02). HCWs in UMIC had the highest pooled prevalence, 25% and those in LMLIC had the lowest, 19% (Table 5.6).

Table 5.6 Prevalence of tobacco use in HCWs by WB country income level

Countries	Studies (n)	Pooled estimate % (95% CI),	I^2%	P-value for difference between income groups
All	282	22 (21-23)	$I^2$99·5	
HIC	157	21 (20-23)	$I^2$99·7	
UMIC	92	25 (22-28)	$I^2$99·2	0.02
LMLIC	33	19 (15-23)	$I^2$97·1	

Data HCWs=healthcare workers; WB=World Bank; HIC=high income countries; UMIC=upper middle income countries; LMLIC=lower middle and low income countries.

5.4.3.2 Prevalence of tobacco use by occupation

The pooled prevalence of tobacco use varied significantly by occupation (p=0.01) (Table 5.7).

Table 5.7 Prevalence of tobacco use in HCWs by occupation

HCW occupation	Studies (n)	Pooled estimate % (95% CI)	I^2%	P-value for difference between occupations
Medical	119	20 (19-22)	$I^2$99·1	
Nursing	62	25 (22-27)	$I^2$99·7	
Dental	12	20 (14-27)	$I^2$97·2	
Pharmacy	5	20 (10-30)	$I^2$98.3	0.01
Allied	13	16 (11-21)	$I^2$97·9	
Mixed	71	24 (21-28)	$I^2$99·5	

HCW=Healthcare worker.

Nursing and mixed HCWs had the highest prevalence estimates, 25% (95% CI 22-27) and 24% (95% CI 21-28) respectively (Figures 5.2 and 5.3).

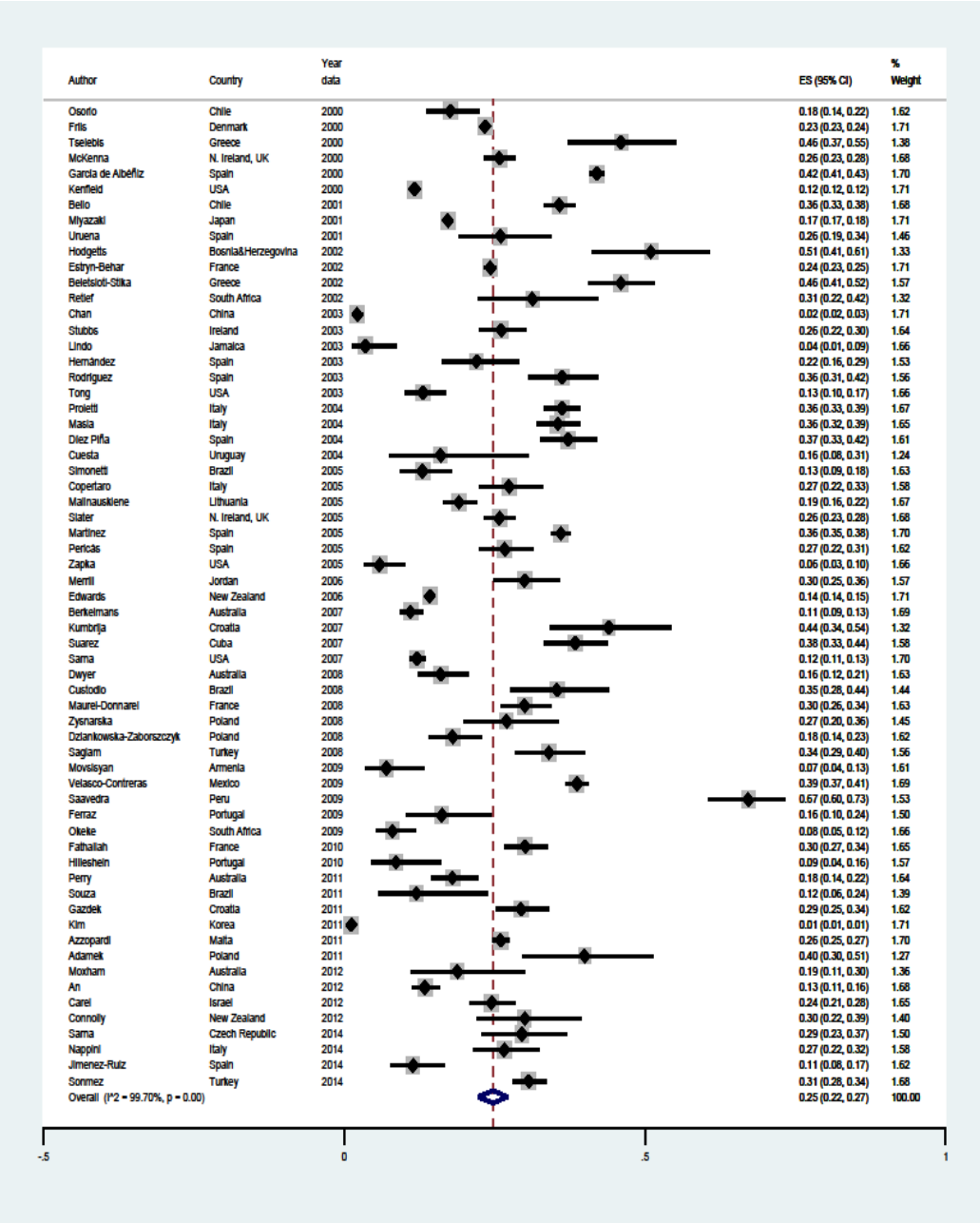


Figure 5.2 Pooled prevalence of tobacco use in nursing HCWs

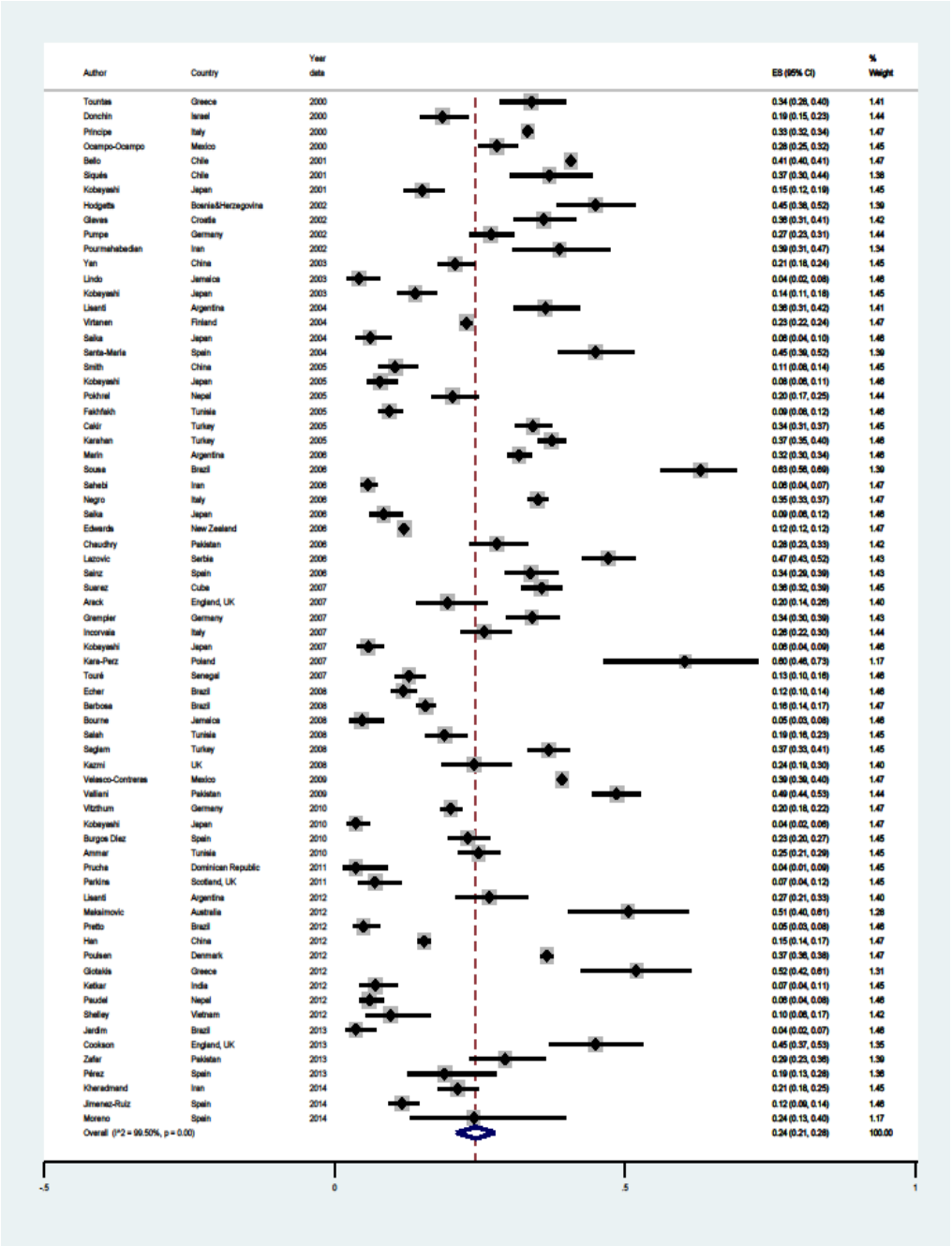


Figure 5.3 Pooled prevalence of tobacco use in mixed HCWs

The pooled prevalence estimates in medical, dental and pharmacy HCWs was 20% (95%CI 19-22), 20% (95% CI 14-27), and 20% (95% CI 10-30) (Figures 5.4, 5.5. and 5.6).

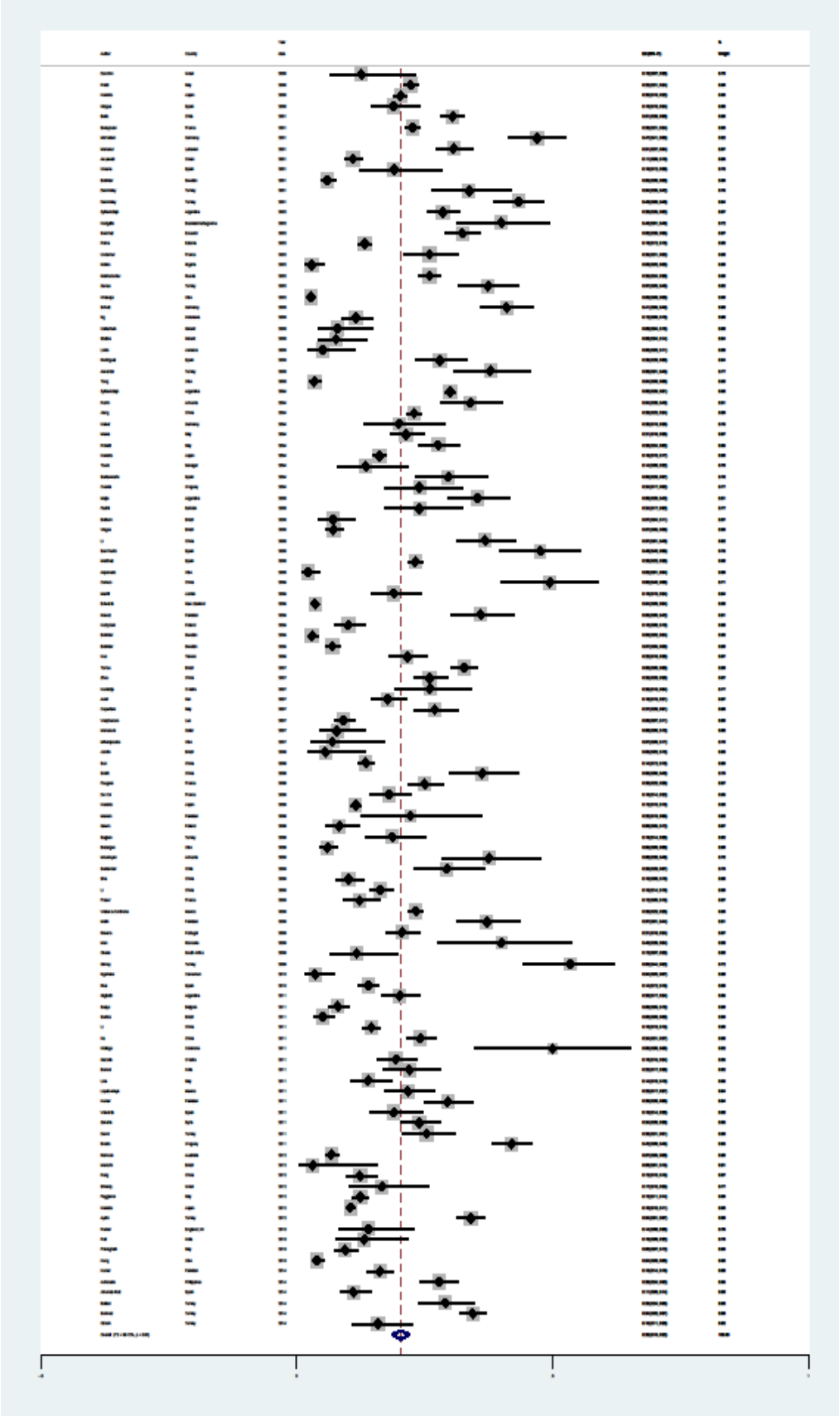


Figure 5.4 Pooled prevalence of tobacco use in medical HCWs

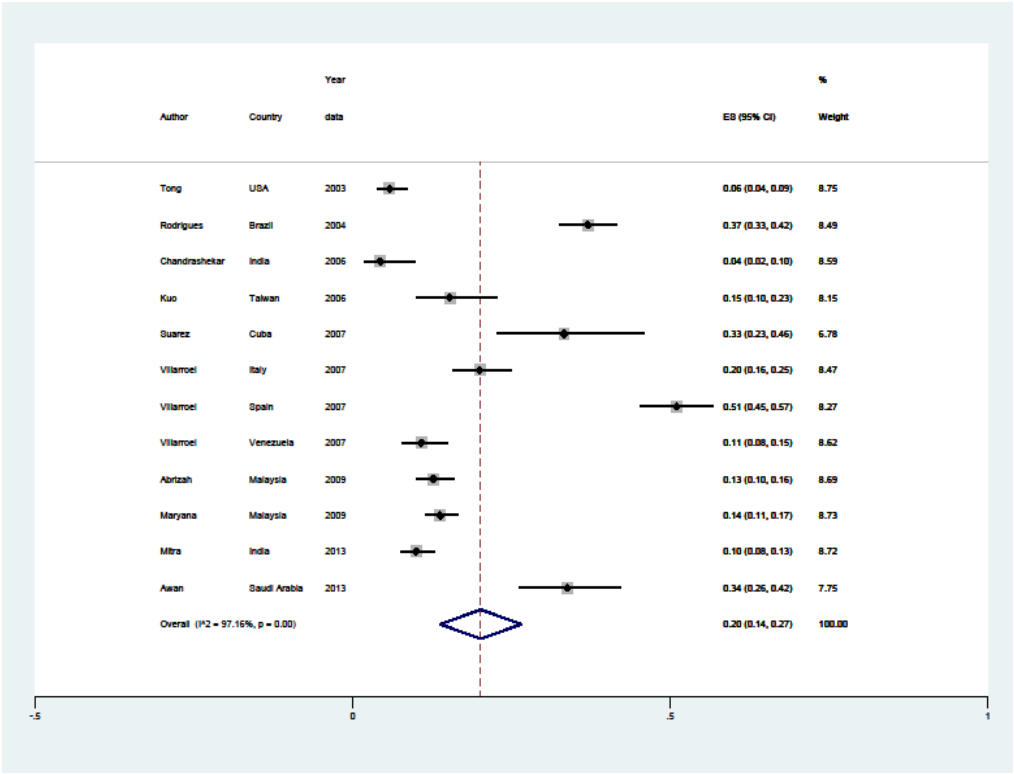


Figure 5.5 Pooled prevalence of tobacco use in dental HCWs

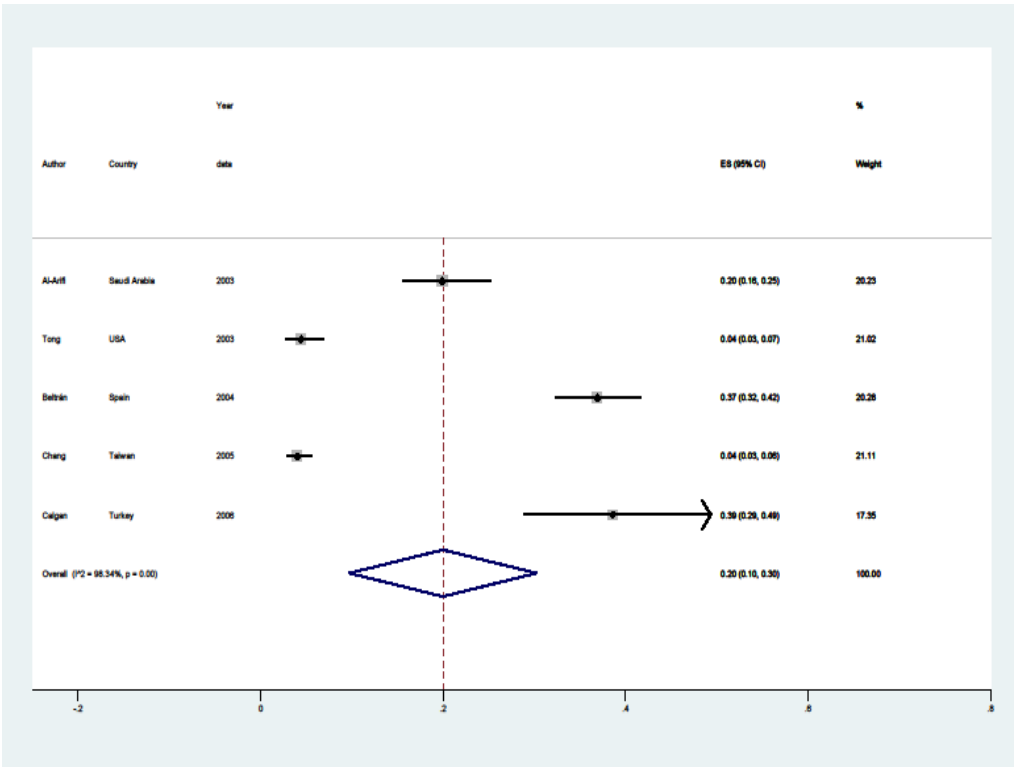


Figure 5.6 Pooled prevalence of tobacco use in pharmacy HCWs

Allied HCWs had the lowest pooled prevalence estimate, 16% (95% CI 11-21) (Figure 5.7).

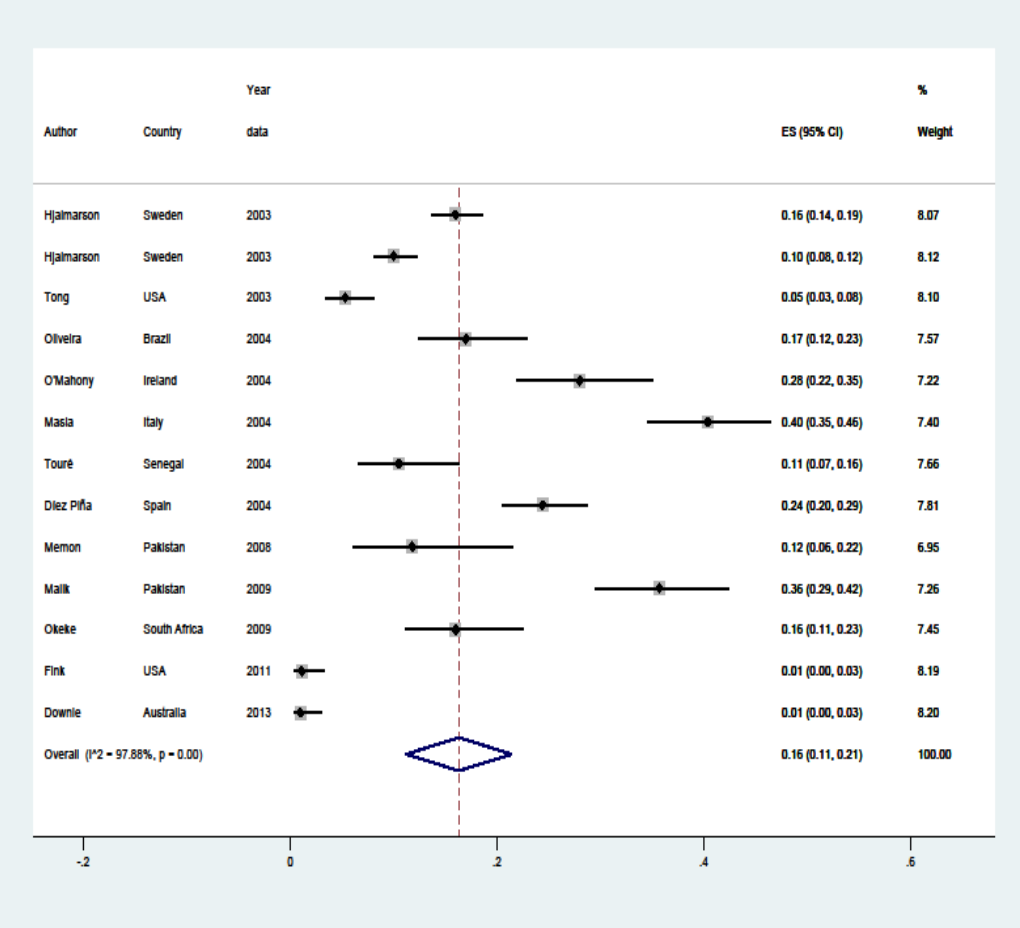


Figure 5.7 Pooled prevalence of tobacco use in allied HCWs

5.4.3.3 Prevalence of tobacco use by occupation and WB country income level

The pooled prevalence in medical, nursing and dental occupations showed a significant difference by income level ($p<0.01$) (Table 5.8).

Table 5.8 Prevalence of tobacco use in HCWs by occupation and WB country income level

HCW occupation	Studies (n)	Pooled estimate % (95% CI), I^2%				P-value for difference between income groups
		All	HIC	UMIC	LMLIC	
Medical	119	20 (19-22), $I^2$99·1	17 (15-19), $I^2$99.1	25 (22-28), $I^2$97·7	21 (16-26), $I^2$97·2	<0.01
Nursing	62	25 (22-27), $I^2$99·7	24 (22-27), $I^2$99·8	27 (17-37), $I^2$99·4	7 (4-13) -	<0.01
Dental	12	20 (14-27), $I^2$97·2	25 (9-41), $I^2$98·3	21 (12-30), $I^2$96·3	8 (6-10) -	<0.01
Pharmacy	5	20 (10-20), $I^2$98.3	16 (5-27), $I^2$98·5	39 (29-49), -	-	<0.01
Allied	13	16 (11-21), $I^2$97·9	15 (9-21), $I^2$98·4	17 (13-20), $I^2$0	19 (3-35), $I^2$0	0.87
Mixed	71	24 (21-28), $I^2$99·5	26 (21-31), $I^2$99·8	25 (19-31), $I^2$98·5	19 (13-26), $I^2$97·8	0.32

HCWs= health care workers; WB=World Bank; HIC= high income countries; UMIC=upper middle income countries LMLIC = Lower middle and low income countries.

Medical

Medical HCWs in UMIC and LMLIC had a higher pooled prevalence of tobacco use compared with their counterparts in HIC, 25% (95% CI 22-28) and 21% (95% CI 16-26) vs 17% (95% CI 15-19) respectively (Figure 5.8).

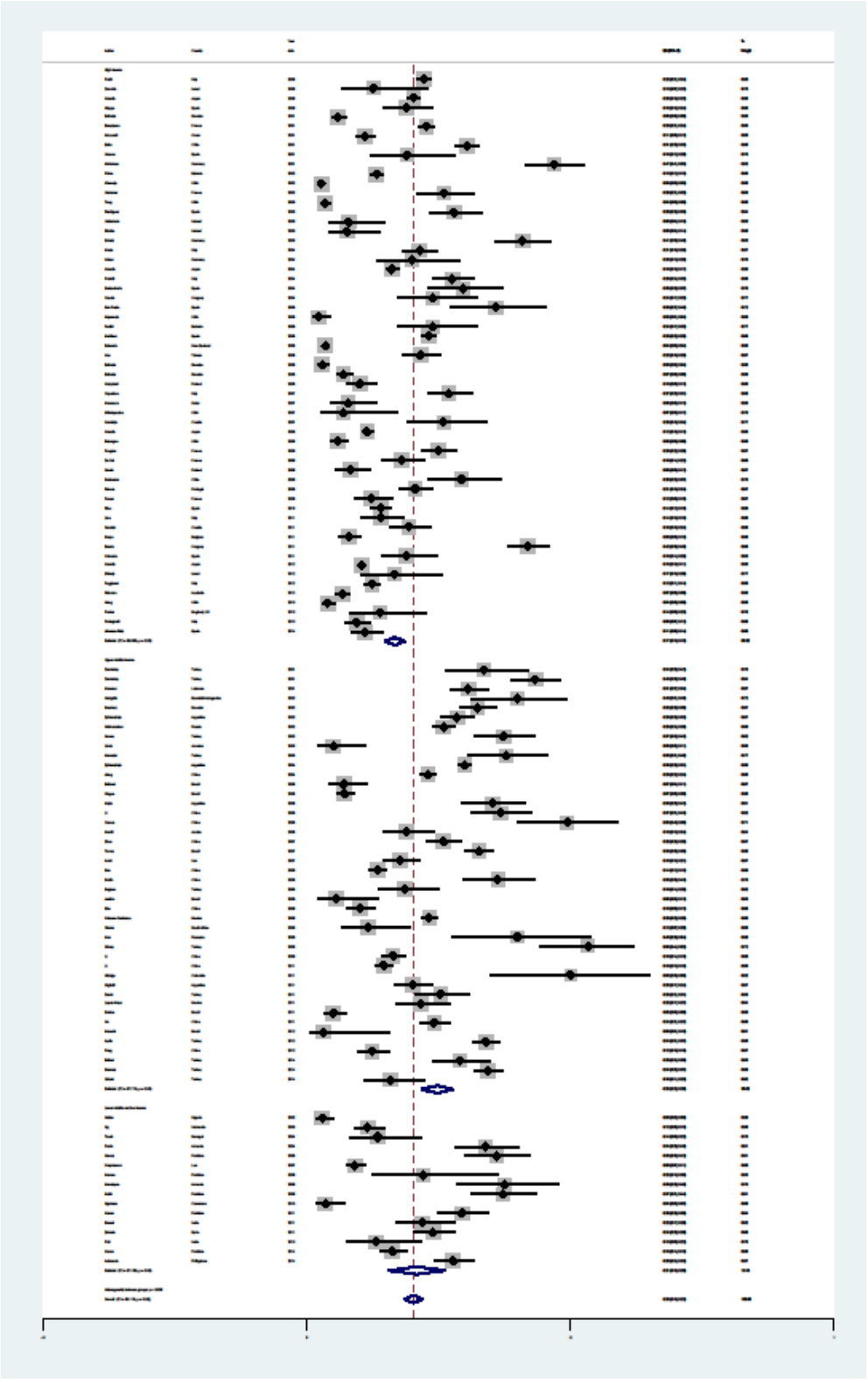


Figure 5.8 Pooled prevalence of tobacco use in medical HCWs by WB country income level

Nursing

Nursing HCWs in UMIC and HIC had a higher pooled prevalence compared with their counterparts in LMLIC, 27% (95% CI 17-37) and 24% (95% CI 22-27) vs 7% (95% CI 4-13) (Figure 5.9).

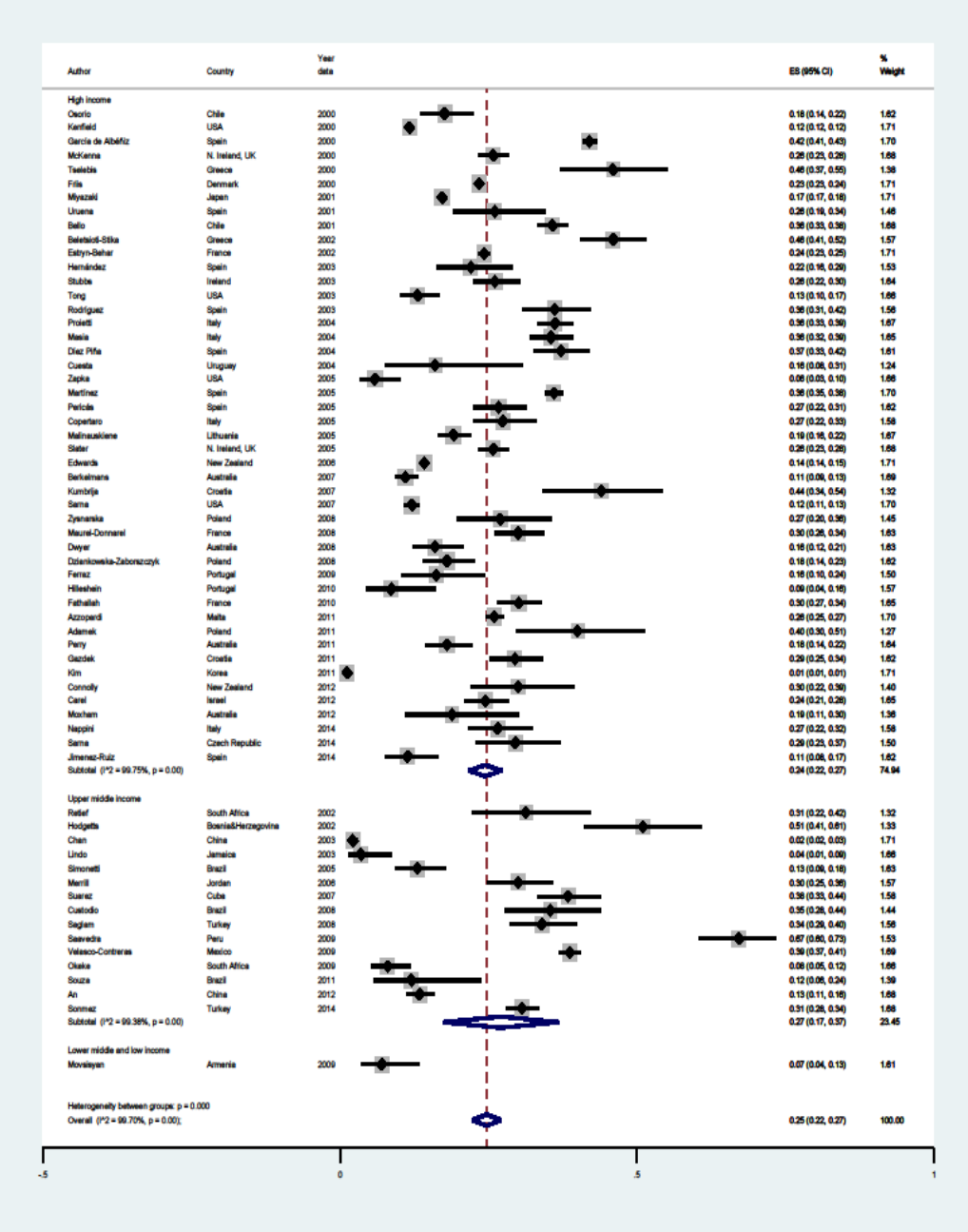


Figure 5.9 Pooled prevalence of tobacco use in nursing HCWs by WB country income level

Dental

Dental HCWs in HIC and UMIC had a higher pooled prevalence compared with those in LMLIC, 25% (95% CI 9-41) and 21% (95% CI 12-30) vs 8% (95% CI 6-10) (Figure 5.10)

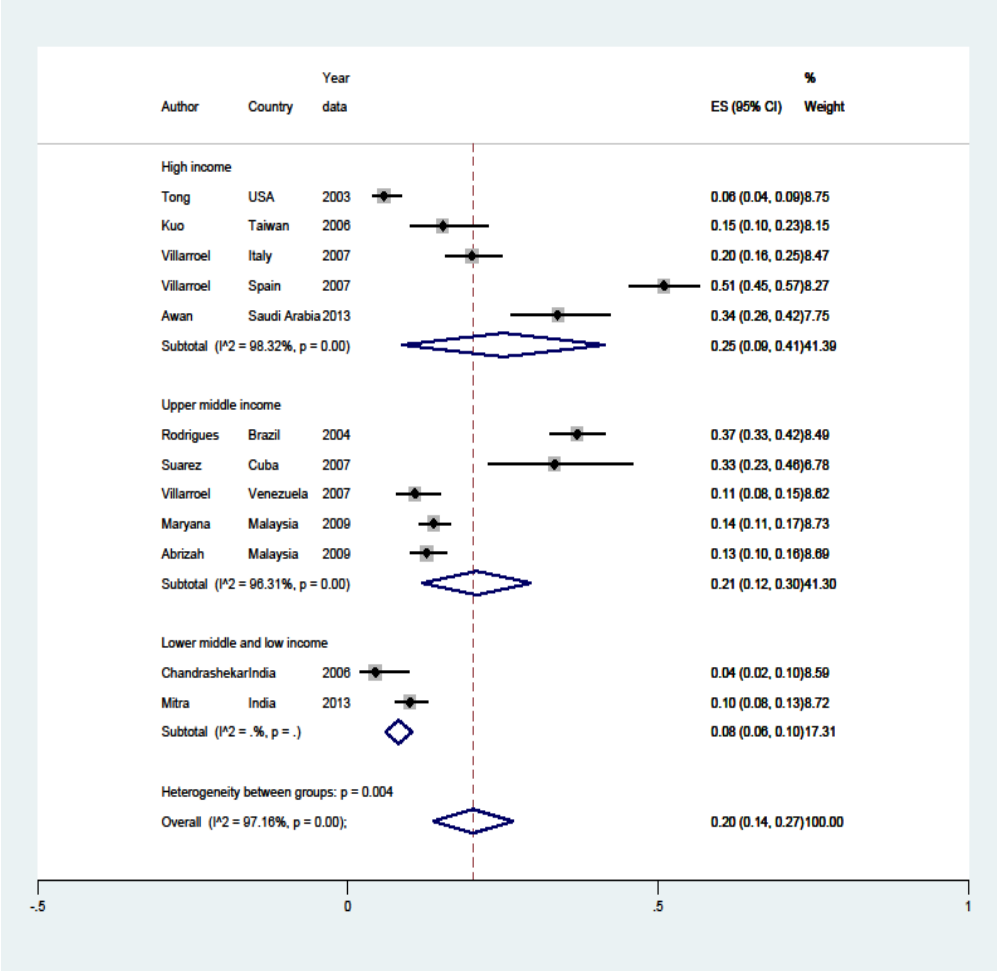


Figure 5.10 Pooled prevalence of tobacco use in dental HCWs by WB country income level

Pharmacy

Pharmacy HCWs in UMIC had a higher pooled prevalence than those in HIC, 39% (95% CI 29-49) vs 16% (95% CI 5-27). There were no data available from LMLIC (Figure 5.11).

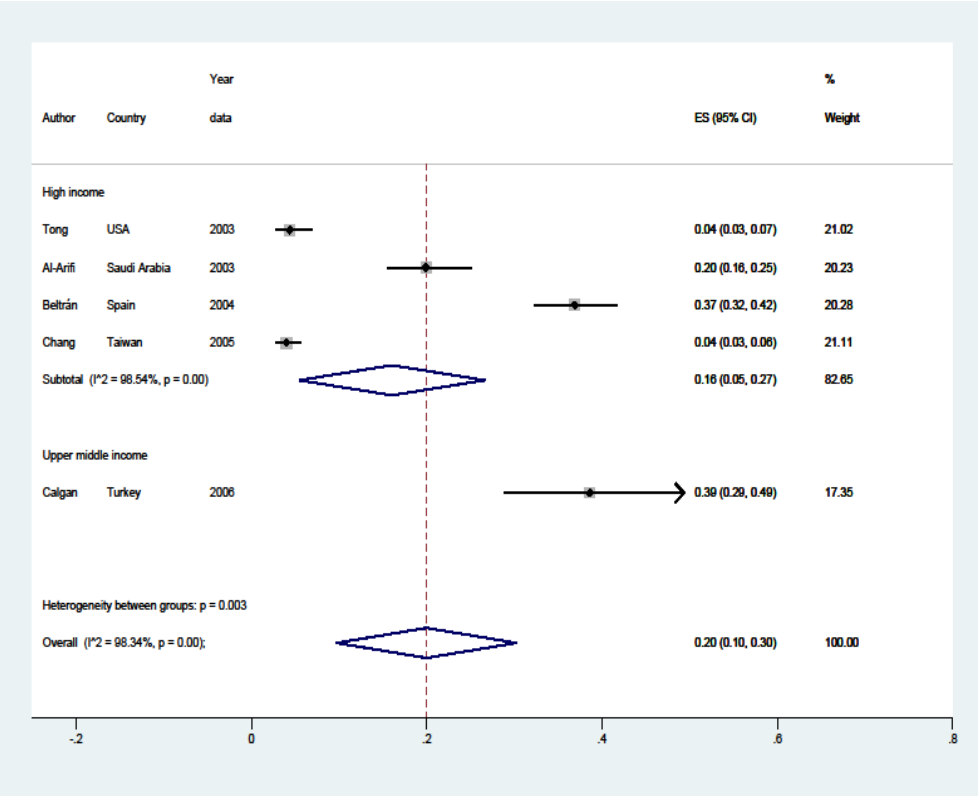


Figure 5.11 Pooled prevalence of tobacco use in pharmacy HCWs by WB country income level

Allied

Allied HCWs in LMLIC had the highest prevalence compared with HIC and UMIC, 19% (95% CI 3-35) vs 15% (95% CI 9-21) and 17% (95% CI 13-20) respectively, p=0.87 (Figure 5.12).

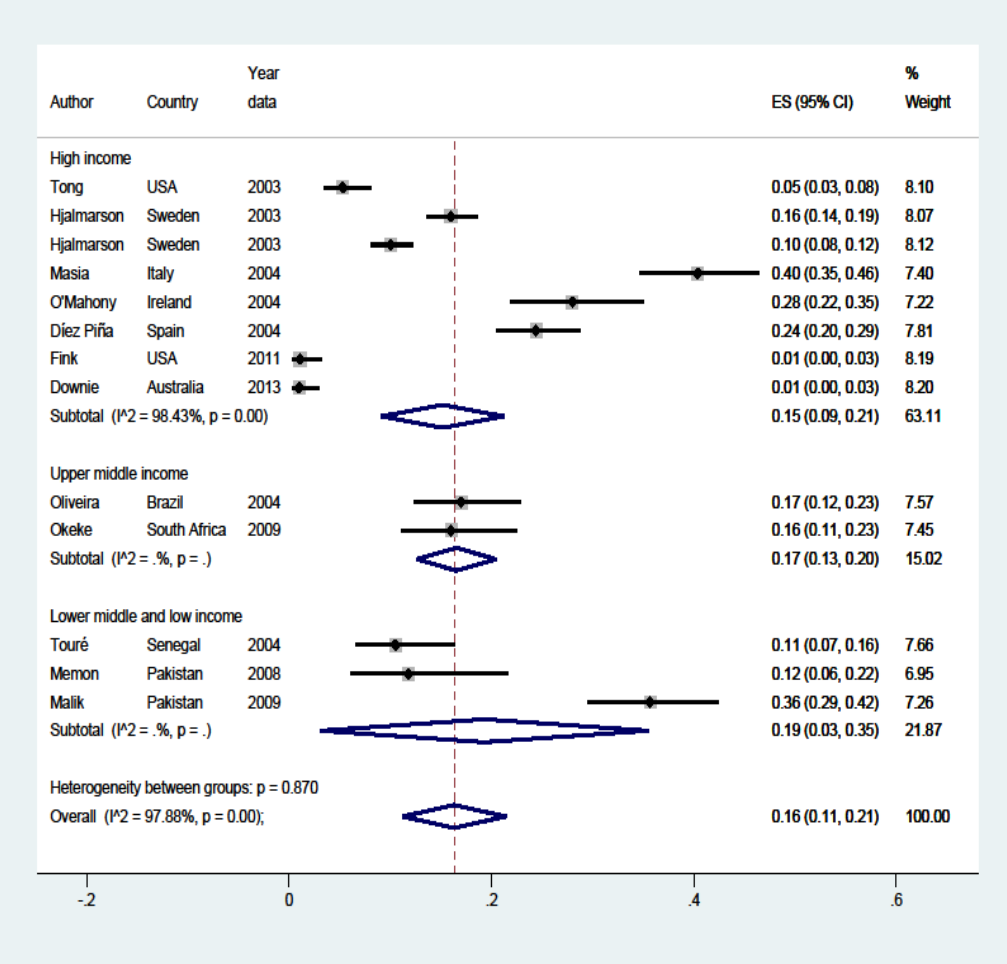


Figure 5.12 Pooled prevalence of tobacco use in allied HCWs by WB country income level

Mixed

Mixed HCWs in HIC and UMIC had a higher pooled prevalence compared with LMLIC, 26% (95% CI 21-31) and 25% (95% CI 19-31) vs 19% (95% CI 13-26), p=0.32 (Figure 5.13)

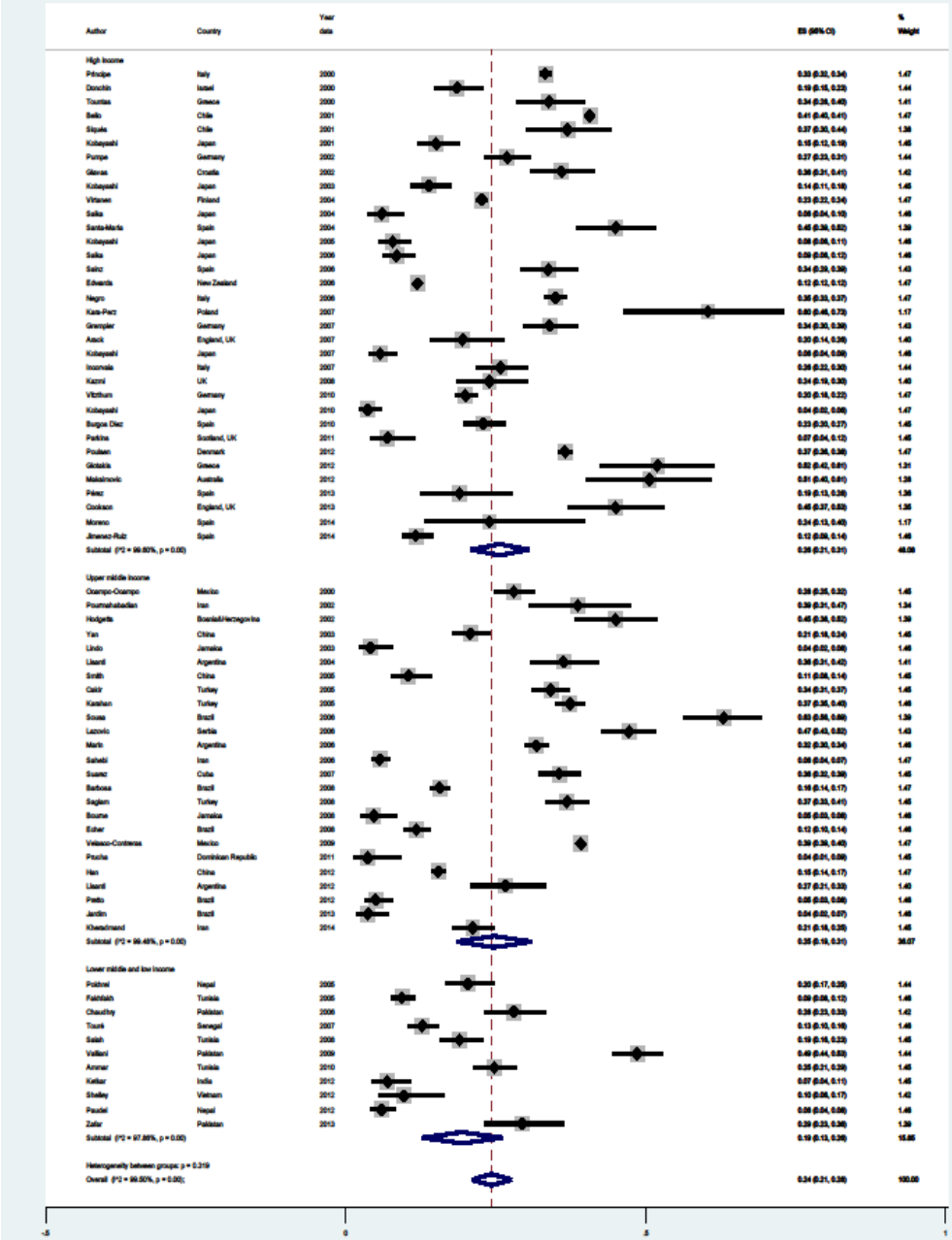


Figure 5.13 Pooled prevalence of tobacco use in mixed HCWs by WB country income level

5.4.3.4 Prevalence of tobacco use by gender and income level

The overall pooled prevalence in male HCWs was almost twice as high as in female HCWs (31% vs 17%), and showed a significant difference by income level in both males and females, p<0.01 (Table 5.9).

Table 5.9 Prevalence of tobacco use in HCWs by gender and WB income level

HCWs	All		HIC		UMIC		LMLIC		P-value
	Studies (n),	Pooled estimate, % (95% CI), I^2%	Studies (n)	Pooled estimate, % (95% CI), I^2%	Studies (n)	Pooled estimate, % (95% CI), I^2%	Studies (n)	Pooled estimate, % (95% CI), I^2%	
Male	78	31 (28-34), $I^2$99·4	40	24 (21-27), $I^2$99	27	37 (34-40), $I^2$99·1	11	37 (21-53), $I^2$98·7	<0·01
Female	97	17 (15-18), $I^2$94·3	47	19 (16-21), I^2 99·7	38	18 (15-20), $I^2$99·2	12	4 (2- 6), $I^2$92·5	<0·01

HCWs= healthcare workers; WB=World Bank; HIC= high income countries; UMIC=upper middle income countries LMLIC = Lower middle and low income countries.

The highest pooled prevalence was in male HCWs in UMIC and LMLIC, 37% (95% CI 34-40) and 37% (95% CI 21-53) respectively (Fig 5.14). The highest pooled prevalence in female HCWs was in HIC and UMIC, 19% (95% CI 16-21) and 18% (95% CI 15-20) respectively (Fig 5.15).

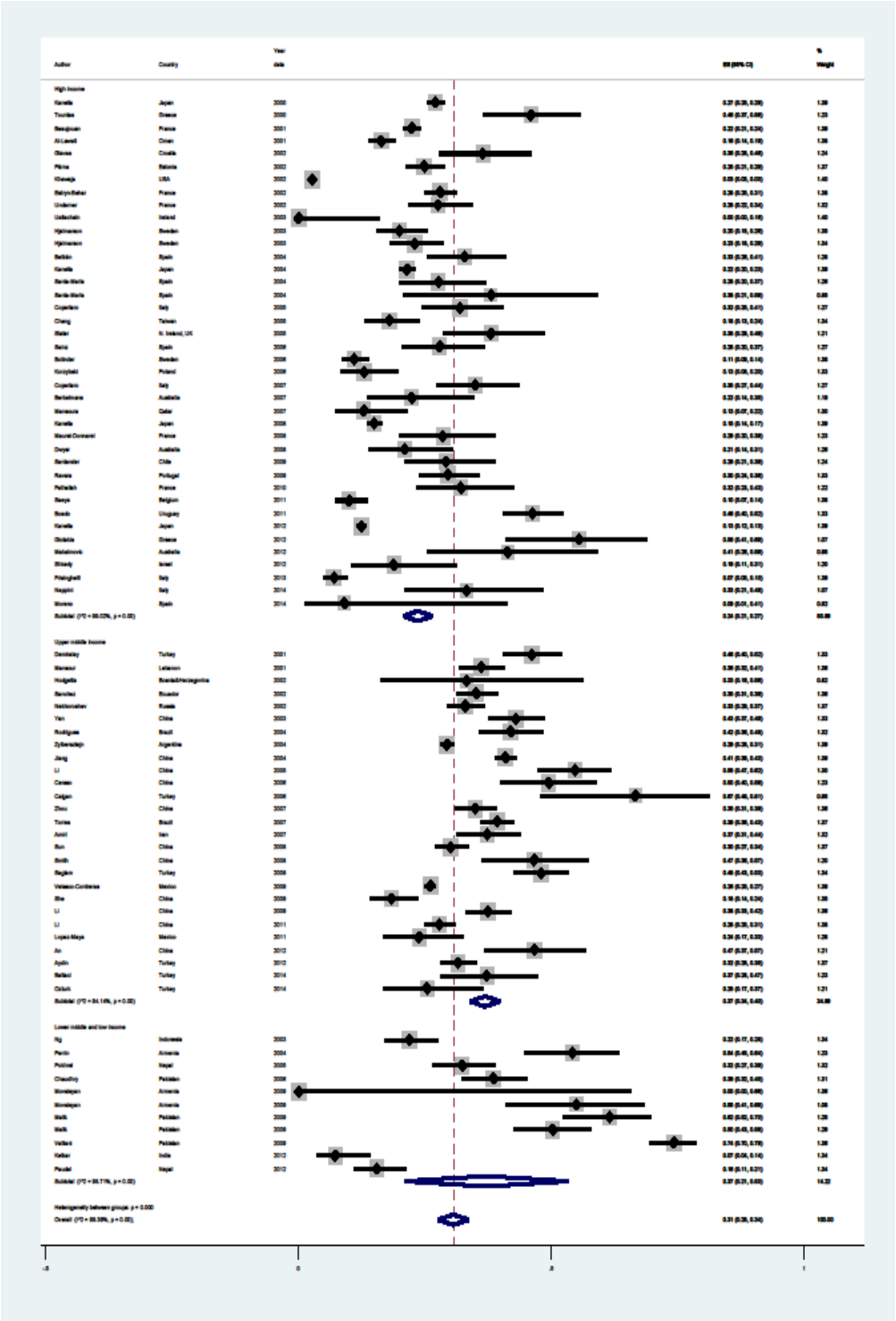


Figure 5.14 Pooled prevalence of tobacco use in male HCWs by WB country income level

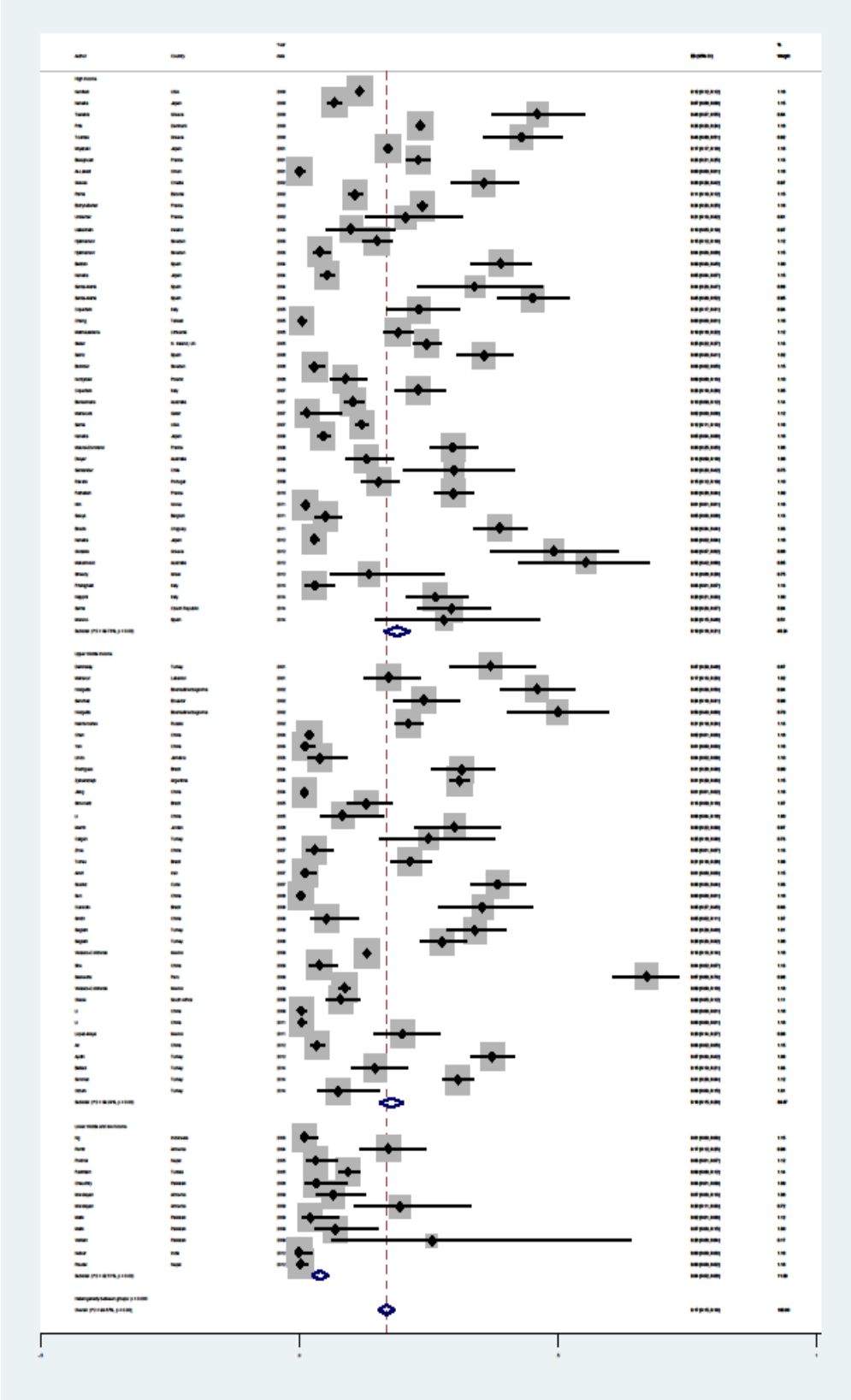


Figure 5.15 Pooled prevalence of tobacco use in female HCWs by WB country income level

5.4.3.5 Prevalence of tobacco use by gender and occupation

Prevalence of tobacco by gender was pooled for medical doctors and nurses.

Medical doctors

The overall pooled prevalence of tobacco use in male medical doctors was higher than in female medical doctors, 29% (95% CI 25-32) vs. 12% (95% CI 10-13) (Figures 5. 16 and 5.17).

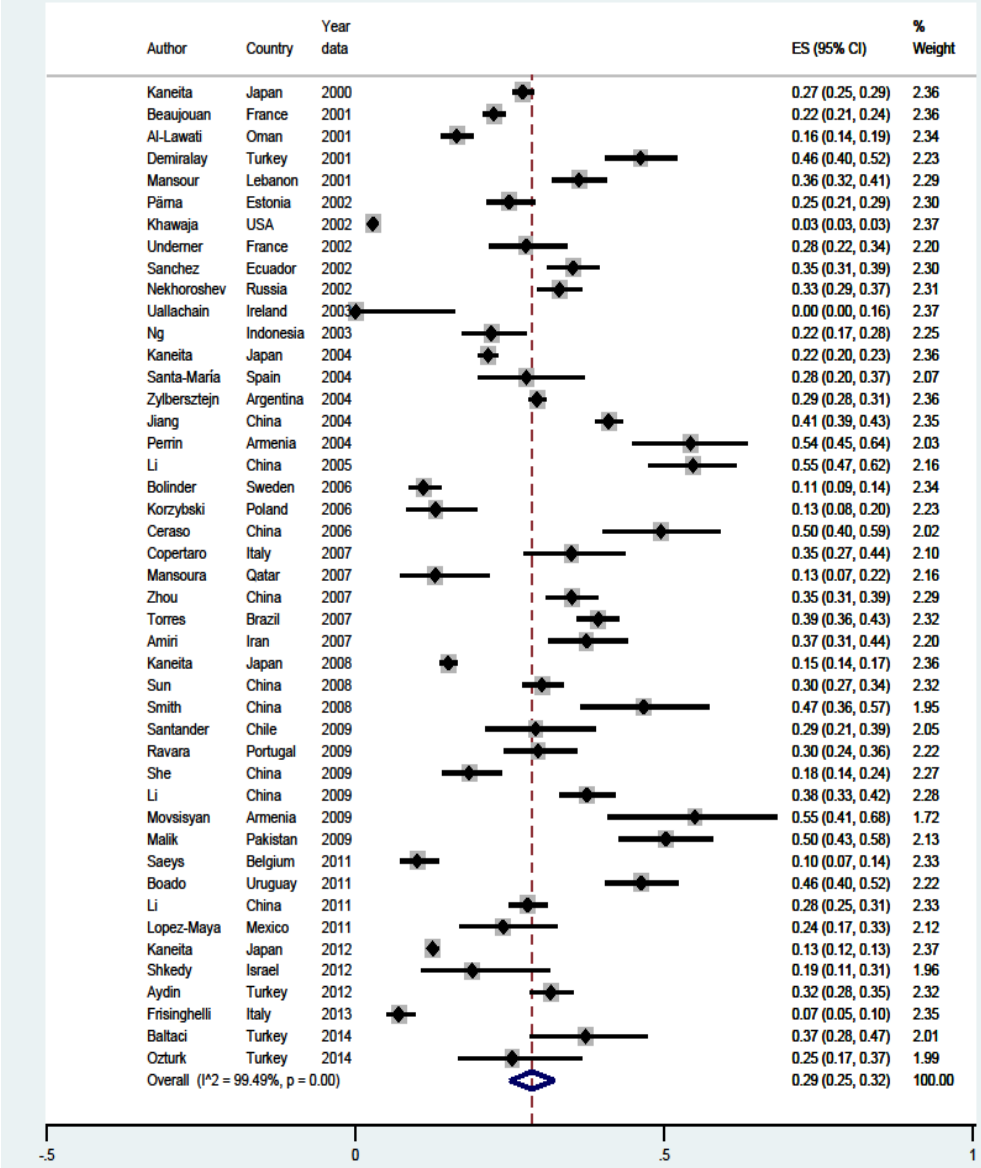


Figure 5.16 Pooled prevalence of tobacco use in male medical doctors

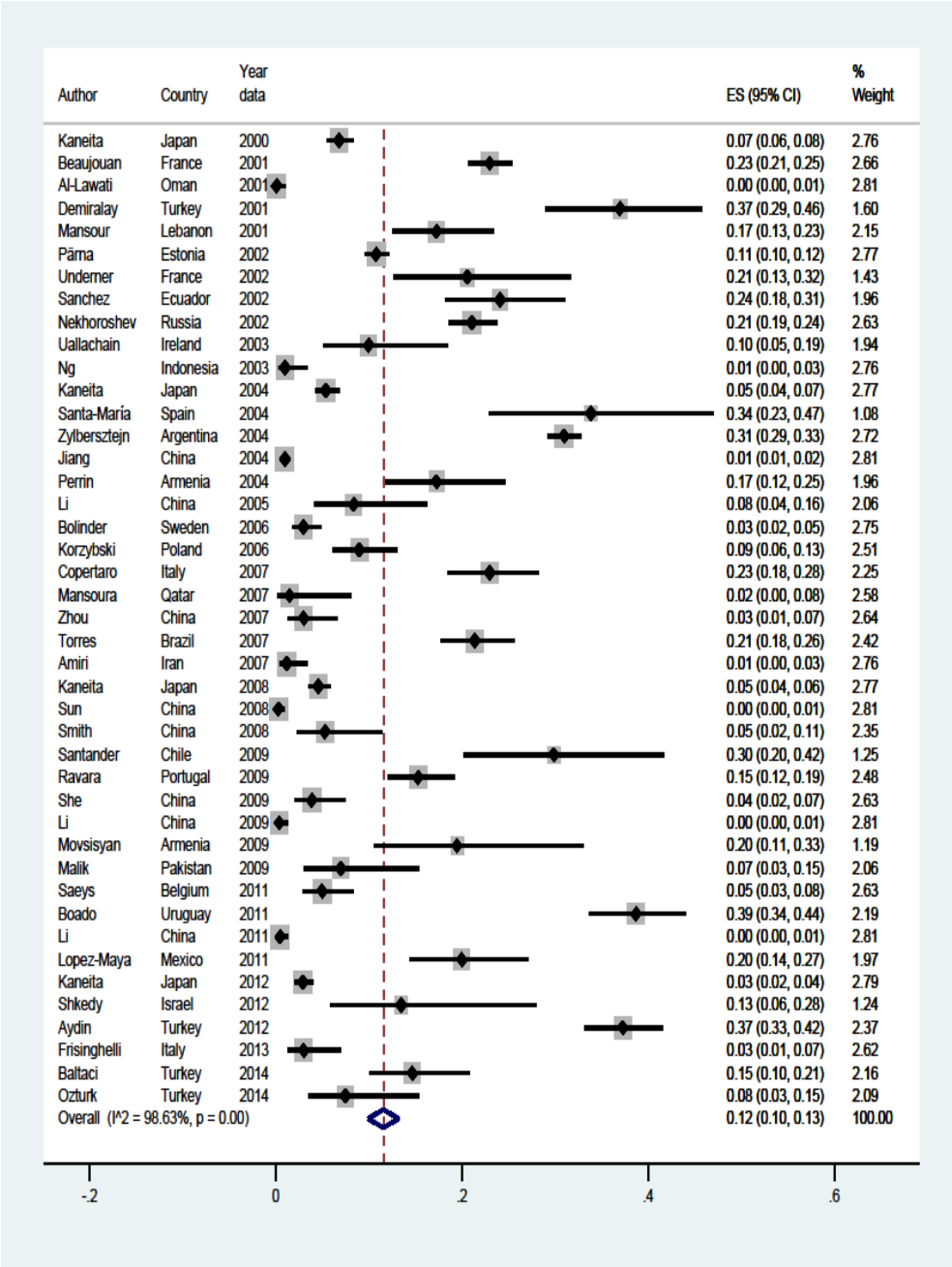


Figure 5.17 Pooled prevalence of tobacco use in female medical doctors

The prevalence in male doctors varied by income level (p <0.01) (Table 5.10), with estimates as low as 19% (95% CI 15-22) in HIC, and as high as 35% (95% CI 32-39) and 45% (95% CI 26-64) in UMIC and LMLIC, respectively (Figure 5.18).

Table 5.10 Pooled prevalence of tobacco use in male and female medical doctors by WB income level

Medical doctors	All		HIC		UMIC		LMLIC		P-value for difference
	Studies (n)	Pooled estimate, % (95% CI), I^2%	Studies (n)	Pooled estimate, % (95% CI), I^2%	Studies (n)	Pooled estimate, % (95% CI), I^2%	Studies (n)	Pooled estimate, % (95% CI), I^2%	
Male	45	29 (25-32), I^2 99·5	21	19 (15-22), I^2 99·4	20	35 (32-39), $I^2$92·1	4	45 (26-64), $I^2$95·1	<0.01
Female	43	12 (10-13), $I^2$98·6	20	12 (9-14), $I^2$98·3	19	13 (11-16), $I^2$99·1	4	10 (1-20), $I^2$91·2	0.82

HCWs= health care workers; WB= World Bank; HIC=High income countries; UMIC=Upper middle income countries; LMLIC=Lower middle and low income countries.

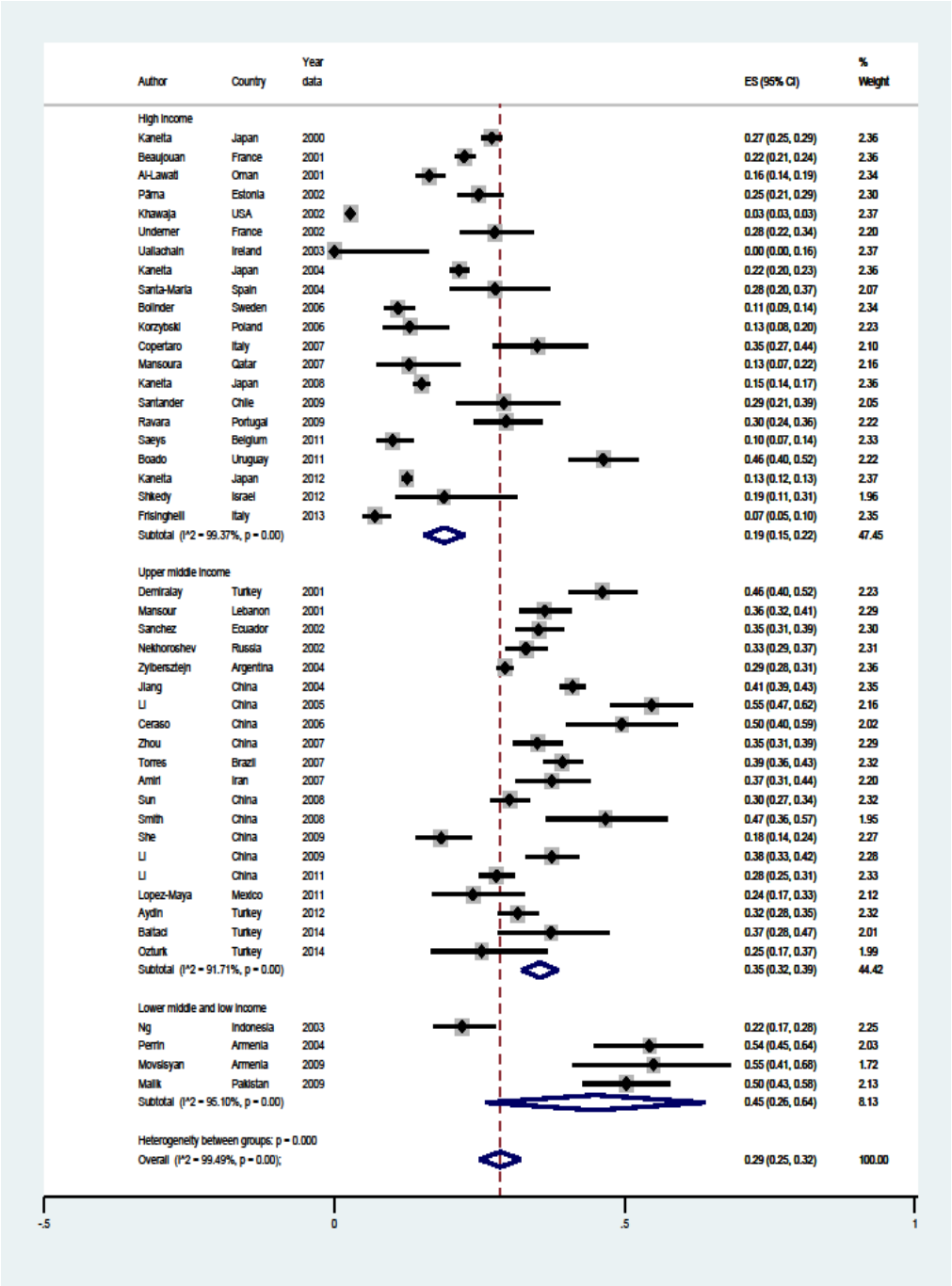


Figure 5.18 Pooled prevalence of tobacco use in male medical doctors by WB income level

The pooled prevalence of tobacco use in female medical doctors did not vary by income level (p =0.82) (Table 5.10, Figure 5. 19).

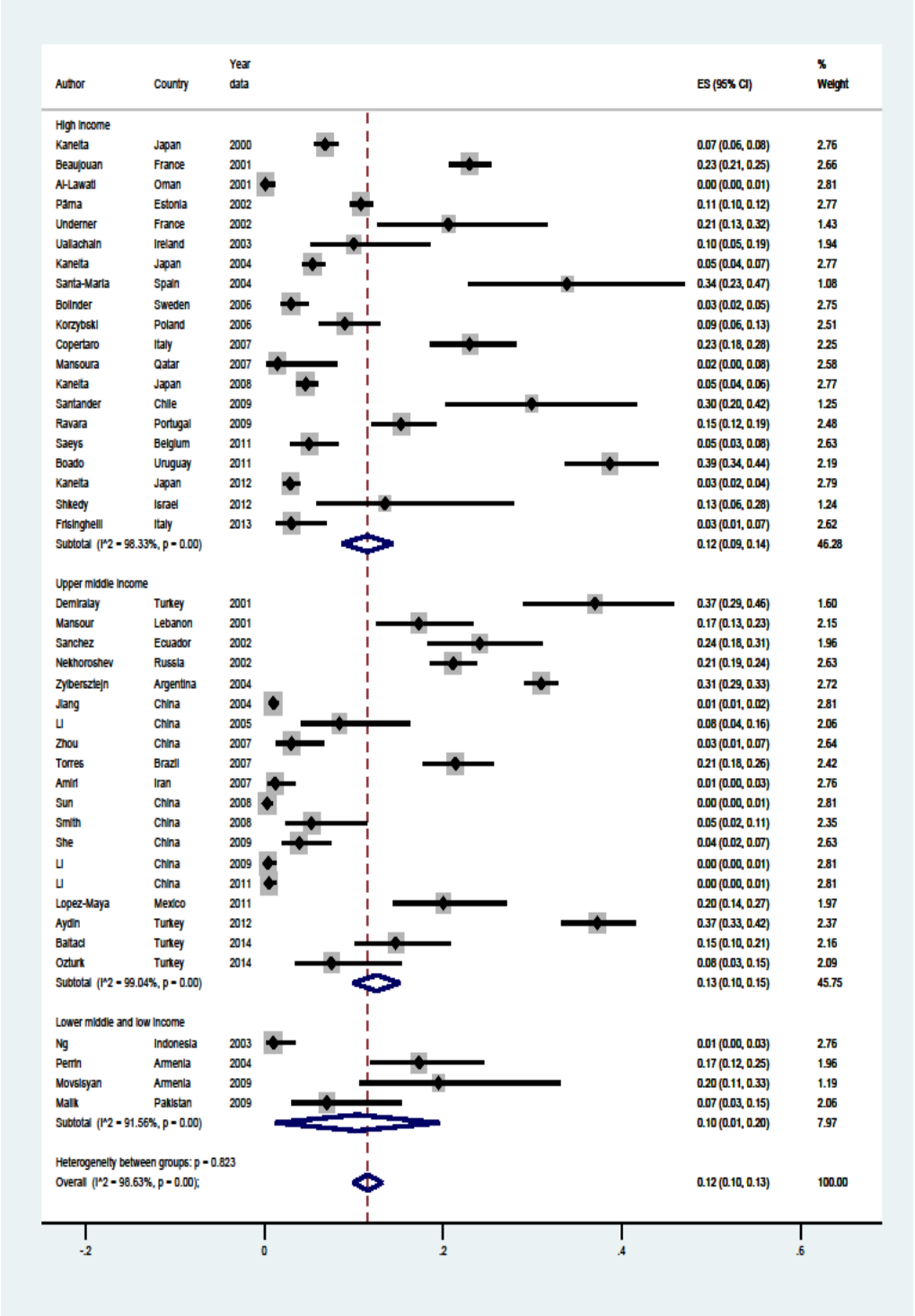


Figure 5.19 Pooled prevalence of tobacco use in female medical doctors by WB income level

Nurses

The overall pooled prevalence in male nurses was higher than in female nurses, 28% (95% CI 18-37) vs. 18% (95% CI 14-22) (Figures 20, 21).

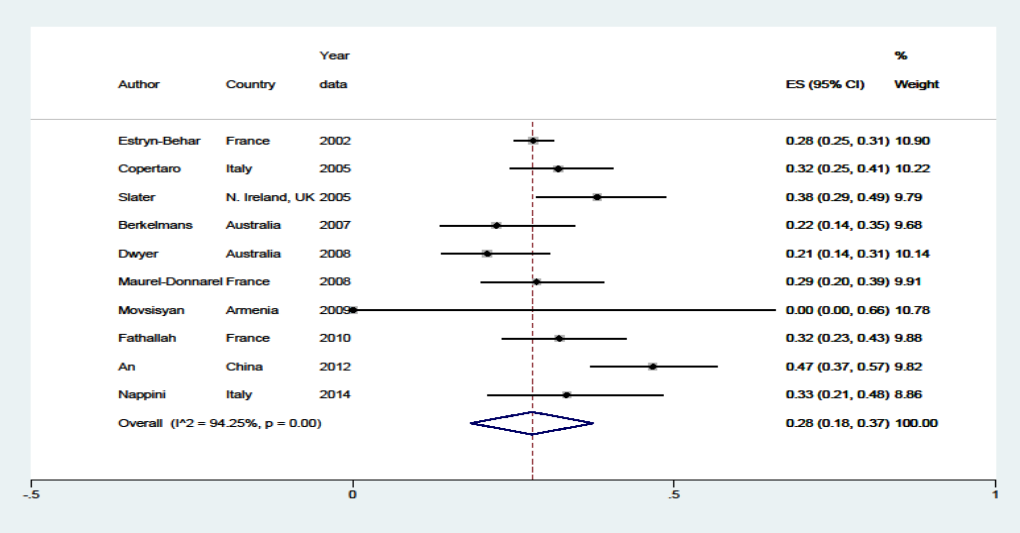


Figure 5.20 Pooled prevalence of tobacco use in male nurses

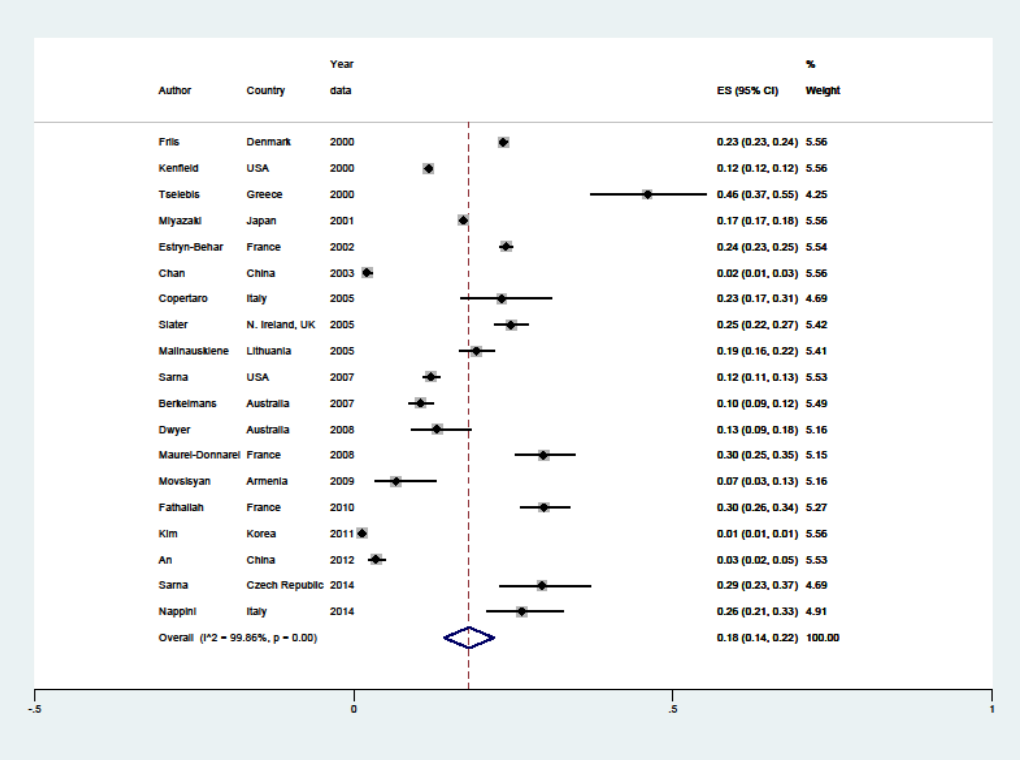


Figure 5.21 Pooled prevalence of tobacco use in female nurses

There was a significant difference in pooled prevalence by income level in both male and female nurses (p <0.01), (Table 5.11), with the highest estimates in male nurses and in female nurses in UMIC, 47% (95%CI 37-57) and 24% (95%CI 18-30) respectively, and lowest in male and female nurses in LMLIC, 0% (95%CI 0-66) 7% (95%CI 3-13) (Figures 22, 23).

Table 5.11 Pooled prevalence estimates in nurses by gender and WB country income level

Nurses	All		HIC		UMIC		LMLIC		P-value for difference
	Studies (n)	Pooled estimate, % (95% CI), I^2%	Studies (n)	Pooled estimate, % (95% CI), I^2%	Studies (n)	Pooled estimate, % (95% CI), I^2%	Studies (n)	Pooled estimate, % (95% CI), I^2%	
Male	10	28 (18-37), $I^2$94·3	8	29 (26-32), $I^2$25·1	1	47 (37-57)	1	0(0-66)	<0.01
Female	30	18 (14-22), $I^2$99·9	16	21 (16-25), $I^2$99·9	13	24 (18-30), $I^2$99	1	7 (3-13)	<0.01

HCWs= health care workers; WB= World Bank; HIC=High income countries; UMIC=Upper middle income countries; LMLIC=Lower middle and low income countries.

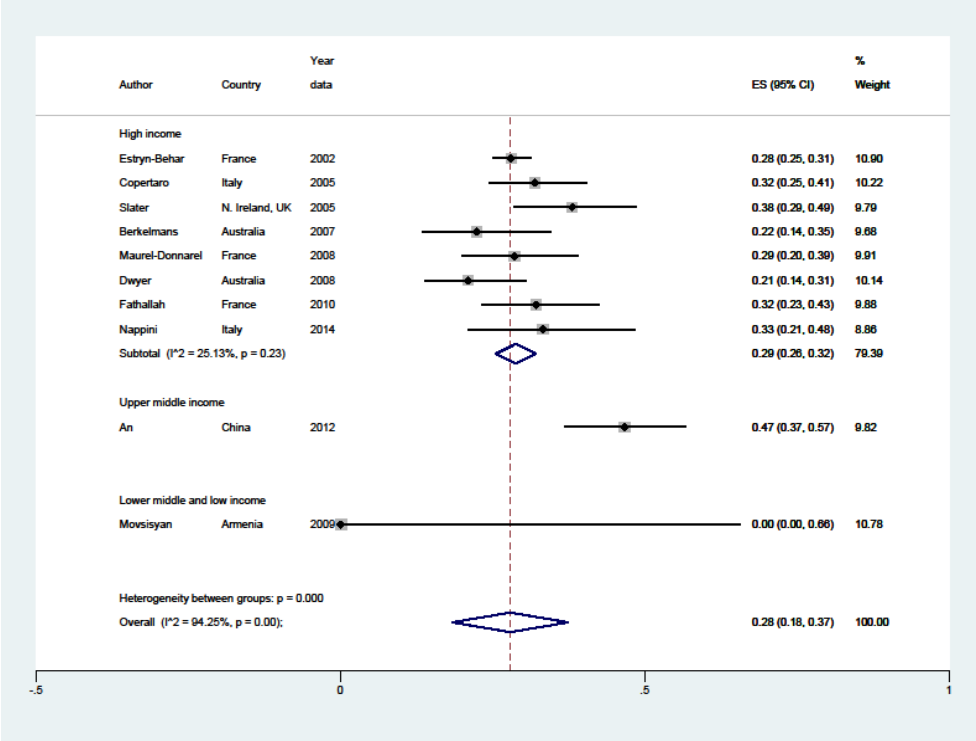


Figure 5.22 Pooled prevalence of tobacco use in male nurses by WB country income level

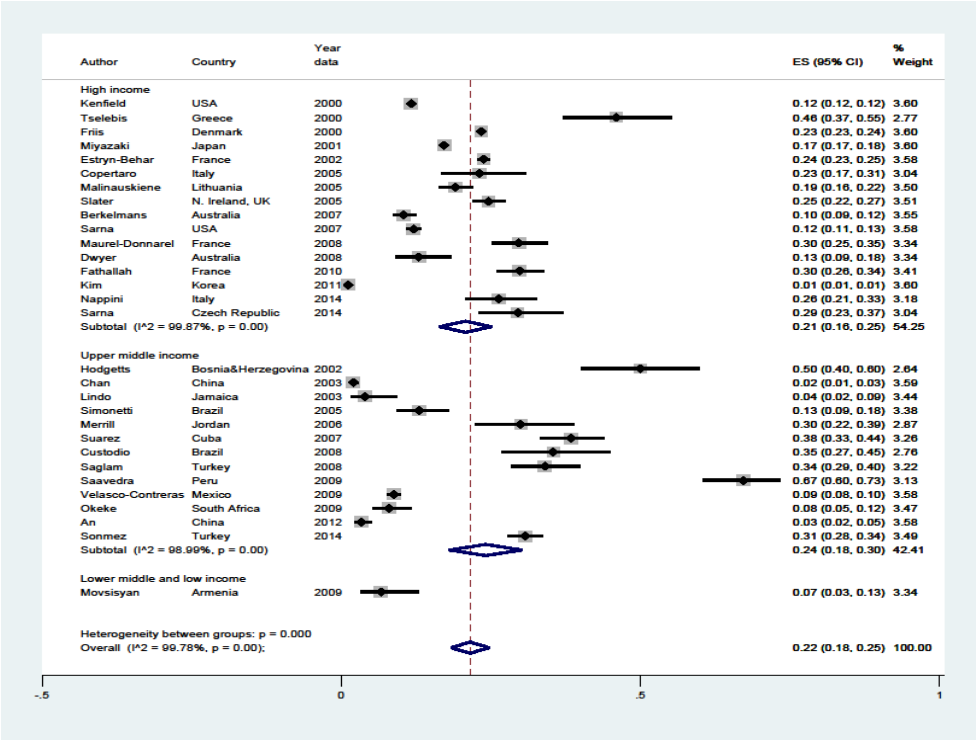


Figure 5.23 Pooled prevalence of tobacco use in female nurses by WB country income level

Female medical doctors and female nurses

Compared with female medical doctors, female nurses had a higher overall prevalence, 18% (95% CI 14-22) vs 12% (95% CI 10-13). This pattern was found in HIC female nurses and doctors, with pooled prevalence estimates of 21% (95% CI 16-25) vs 12% (95% CI 9-14) and in their counterparts in UMIC, with estimates of 24% (95% CI 18-30) vs 13% (95% CI 11-16). An inverted pattern was found in LMLIC where female medical doctors had a higher prevalence than female nurses, 10% (95% CI 1-20) vs 7% (95% CI 3-13).

Male medical doctors and male nurses

The overall pooled prevalence in male medical doctors is similar to that in male nurses, 29% (95% CI 25-32) and 28% (95% CI 18-37). In HIC and UMIC the prevalence in male nurses is higher than that in male doctors, 29% (95% CI 26-32) vs 19% (95% CI 15-22) and 47% (95% CI 37-57) vs 35% (95% CI 32-39), respectively, whereas in LMLIC male doctors had a higher prevalence than male nurses, 45% (95% CI 26-64) vs 0% (95% CI 0-66).

5.4.3.6 Prevalence of tobacco use by year

The pooled prevalence of tobacco use was highest in 2000-2005 compared with 2006-2010 and 2011-2014, 23% (95% CI 20-25) vs 19% (95% CI 16-23) and 19% (95% CI 16-22), p=0.06 (Table 5.12)

There were some overall decreases in prevalence in recent years in HIC (p=0.03), and UMIC, (p=0.01), but not in LMLIC where there was no statistically significant difference (p=0.22).

Table 5.12 Overall pooled prevalence of tobacco use in HCWs by WB country income level and year

Year of data collection	Studies (n)	Overall pooled prevalence % (95%CI) and heterogeneity (I2%)				P-value for sub-group difference across income level and heterogeneity (I^2%)
		All	HIC	UMIC	LMLIC	
2000-2005	115	23 (20-25) $I^2$99·6	23 (20-25) $I^2$99·7	27 (22-32) $I^2$99·2	14 (8-20) $I^2$95.9	0.01, $I^2$99·6
2006-2010	99	19 (16-23) $I^2$99·3	19 (16-21) $I^2$98·9	27 (22-31) $I^2$99·2	22 (16-29) $I^2$97.7	<0.01, $I^2$99·3
2011-2014	68	19 (16-22) $I^2$99·3	20 (16-24) $I^2$99·5	19 (14-23) $I^2$97·8	18 (12-23) $I^2$95·8	0.73, $I^2$99·3
P- value for sub-group difference across years and heterogeneity (I^2%)		0.06, $I^2$99·5	0.03, $I^2$99·7	0.01, $I^2$99·5	0.22, $I^2$97·1	

HCWs= healthcare workers; WB=World Bank; HIC= high income countries; UMIC=upper middle income countries LMLIC = lower middle and low income countries.

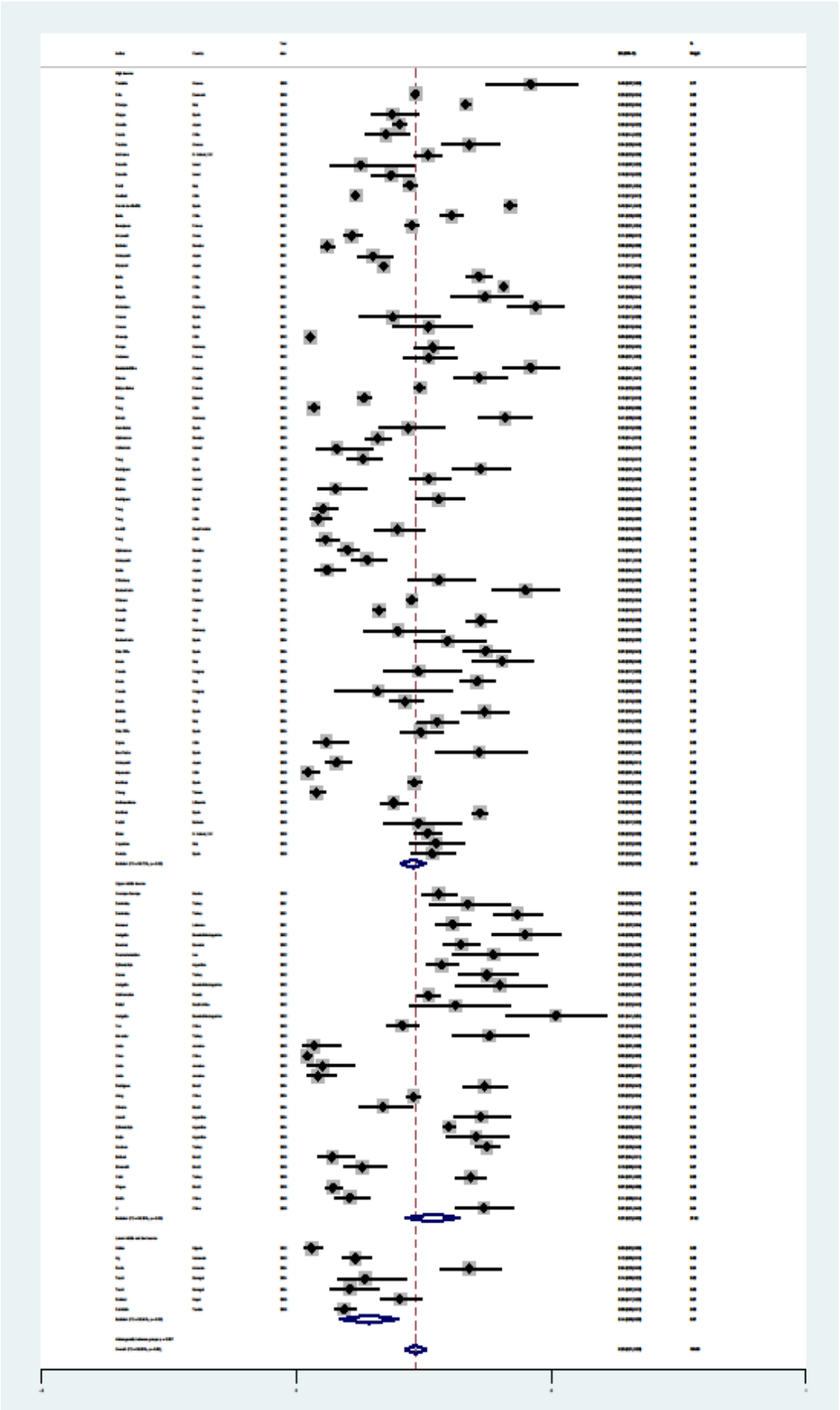


Figure 5.24 Pooled prevalence of tobacco use 2000-2005 by WB country income level

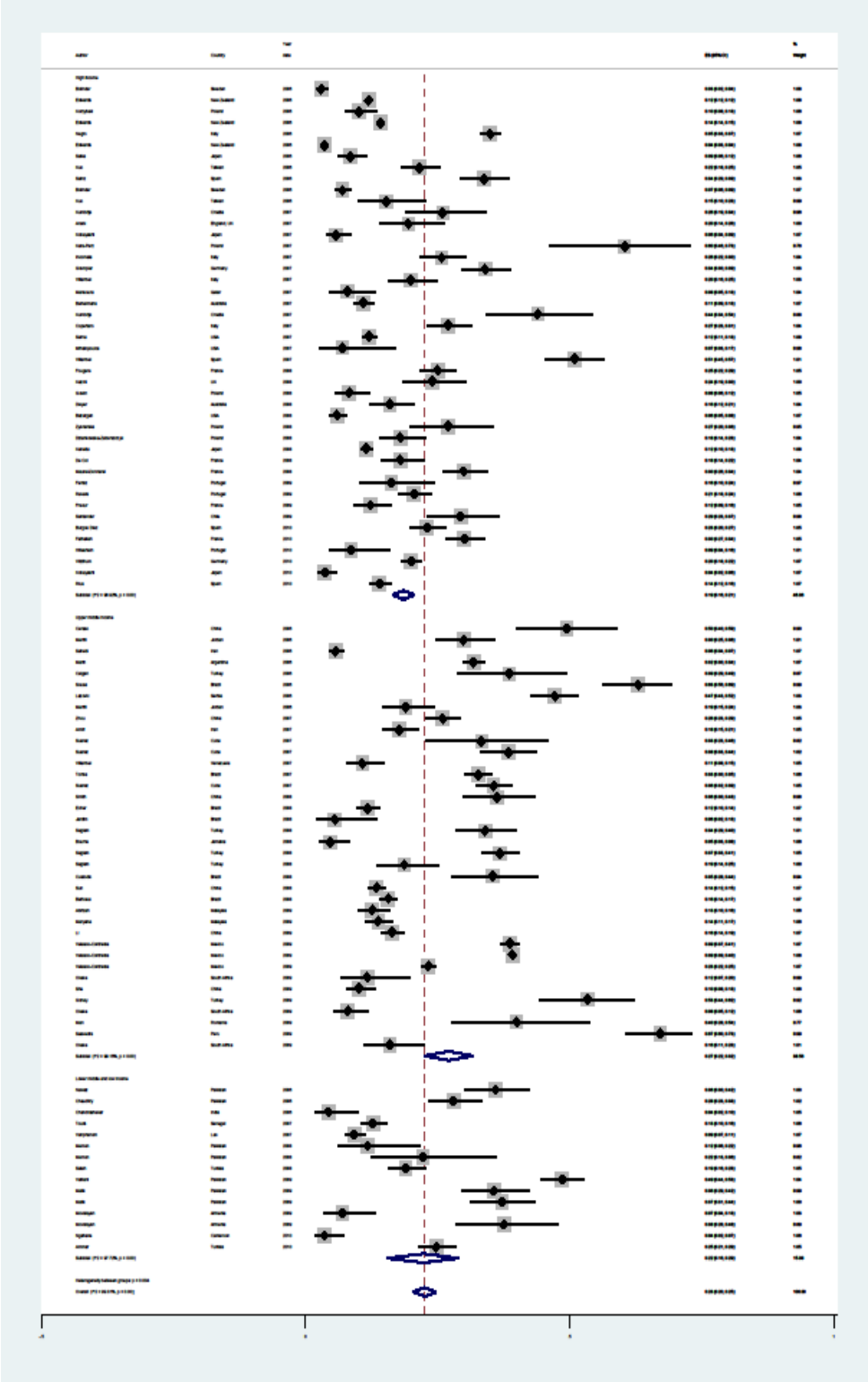


Figure 5.25 Pooled prevalence of tobacco use 2006-2010 by WB country income level

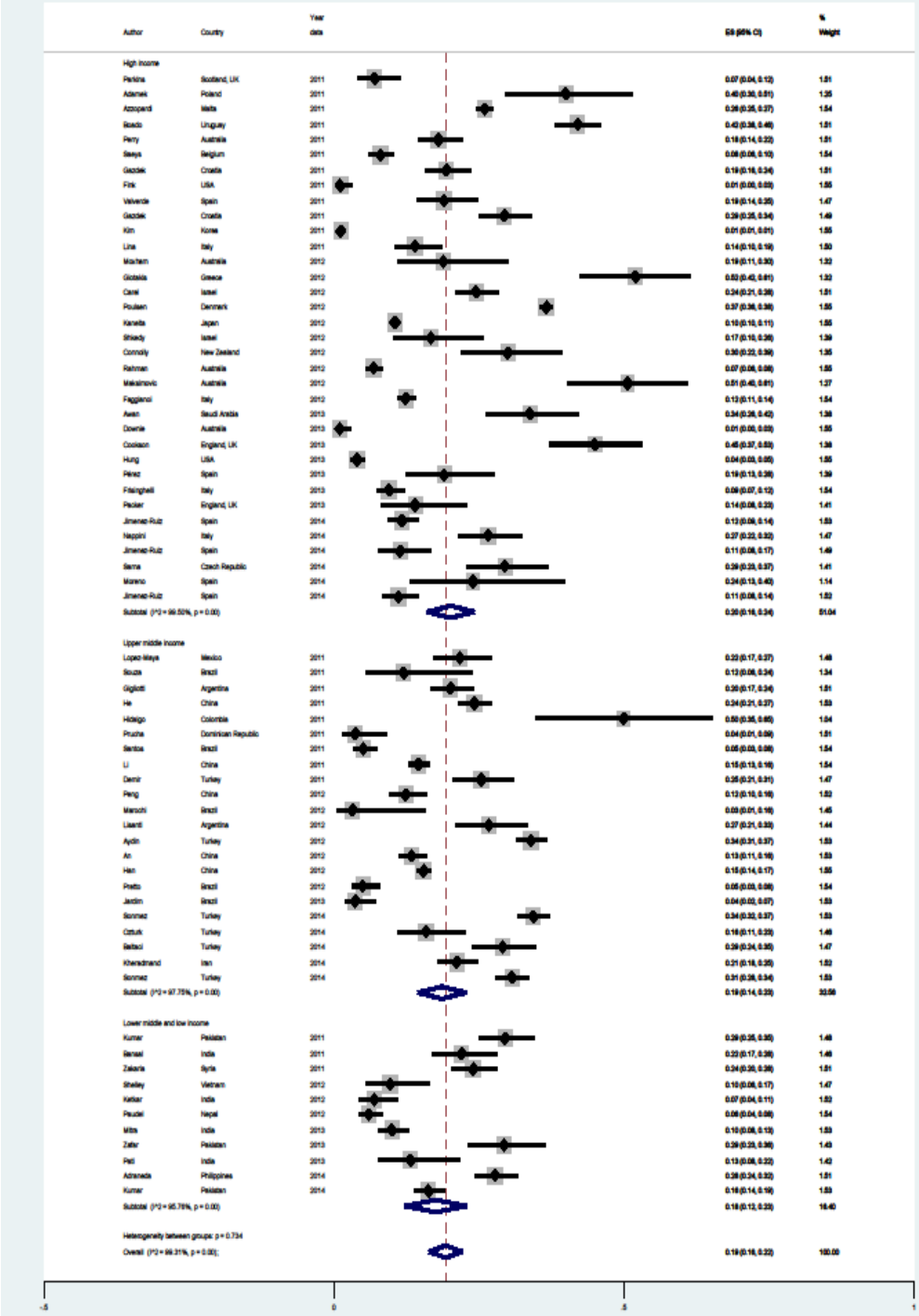


Figure 5.26 Pooled prevalence of tobacco use 2011-2014 by WB country income level

5.4.3.7 Subgroup analysis by quality score

Heterogeneity was explored by subgroup analysis by study quality score (below and above the mean quality score of 4.1).

There was a significant subgroup difference in prevalence by quality score in HIC and UMIC, with studies scored above 4.1 showing a lower prevalence estimate (Table 5.13). In LMLIC the difference was not statistically significant suggesting that quality score did not explain the heterogeneity between studies.

Table 5.13 Subgroup analyses by study quality score

Quality Score		Pooled prevalence estimate %, (95%CI)	Heterogeneity, I^2%	P-value for subgroup difference
All				<0.01
	<4.1	24 (22-26)	$I^2$99.1	
	>4.1	19 (18-21)	$I^2$99.6	
HIC				<0.01
	<4.1	24 (20-27)	$I^2$99.2	
	>4.1	18 (16-20)	$I^2$99.7	
UMIC				0.03
	<4.1	27 (24-31)	$I^2$98.9	
	>4.1	21 (17-25)	$I^2$98.8	
LMLIC				0.397
	<4.1	18 (13-22)	$I^2$96.7	
	>4.1	21 (15-27)	$I^2$97.5	

5.4.3.8 Prevalence of tobacco use in HCWs and the general population – a country level comparison

The difference in prevalence of tobacco use in HCWs compared with that in the general population was examined at a country level using WHO Global Health Observatory data for 2015 (194) (Appendix V).

In high income countries for which prevalence data were available, male HCWs typically had a lower prevalence compared with males in the general population (between two and 22.5 percentage point difference). The only exception was Uruguay, where the prevalence in male HCW was higher, however the estimate was based on data from 2003. It is worth noting that even if lower relative to the general population, male HCW prevalence was still high (above 25% based on data from 2002-2010) in Greece, Croatia, Portugal, Spain, Estonia, Chile, Bahrain. A number of high income countries (Czech Republic, Denmark, Finland, Germany, Korea, Saudi Arabia, and the UK) were lacking prevalence data on HCW, hence it was not possible to make comparisons.

A number of upper middle income countries (Russia, China, Bosnia and Herzegovina) had a lower prevalence in male HCWs compared with males in the population (between 0.1 and 26 percentage points lower),

however it was still high (above 30%). In other upper middle income countries (Mexico, Turkey, Brazil, Iran, Ecuador) the prevalence was higher in male HCWs (between 2.9 and 21 percentage points higher). However, given that the HCW prevalence data were from 2001 and 2002, and the population data were from 2015, it is more likely that the current prevalence in male HCWs in these countries is at levels similar to those in their counterparts in the general population.

The majority of lower-middle and low income countries were lacking in prevalence data. The most recent data on HCW were from Pakistan (2009) and India (2011). Pakistan had a higher prevalence in male HCWs (by 14.3 percentage points) and also a high prevalence in males in the general population (above 40%). In India, the prevalence in male HCWs was 13 percentage points lower than in males in the general population.

The difference in prevalence in female HCWs compared with females in the general population of high income countries ranged from 19.3 percentage point higher (Uruguay) to 15 percentage points lower (Belgium). Unlike male HCWs, in female HCWs in high income countries did not appear to have a lower prevalence compared to females in the general population. Countries with particularly high prevalence rates (above 25%) in both female HCWs and the general

female population included Greece, Spain, Croatia, France, Chile, Estonia. Countries with no prevalence data on female HCWs included Germany, Bahrain, Finland, Saudi Arabia and the UK).

The prevalence in female HCWs in the majority of upper middle income countries was also higher compared to females in the general population, except for two countries (Jamaica and Lebanon). HCW data were generally from before 2010, and in some cases more than a decade older.

Female prevalence data from lower middle and low income countries were limited. Armenia and Pakistan had a higher prevalence in female HCWs, by 13 and 7 percentage points, respectively, while female HCWs in India, Indonesia and Nepal had a lower prevalence. The most recent data on female HCWs were from India (2011), estimated at 0.5% compared to 1.9% in females in 2015.

5.5 Discussion

5.5.1 Main findings

The review identified 282 eligible studies from 67 countries with data on 446 693 HCWs and covering the years from 2000 to 2014. The meta-analysis estimated that overall 22% of HCWs used tobacco between 2000 and 2014. The income differences in prevalence between countries were present in almost all occupations but we were most pronounced in male doctors and female nurses.

The income differences in prevalence were most evident between 2000-2005 and 2006-2010. The prevalence estimates for 2011-2014 did not show a significant difference by income level. This leveling in prevalence in recent years may be due to decreases in tobacco use among HCWs in HIC and UMIC over time while in LMLIC they stayed more or less the same.

By gender and occupation, the highest prevalence estimates were in male medical doctors in UMIC and LMLIC and in female nurses in HIC and UMIC. The high prevalence in male medical doctors in UMIC and LMLIC confirms the findings of previous reviews (172, 490). In addition, prevalence in both male and female nurses in UMIC and HIC was

higher compared with medical doctors in these countries, which suggests occupational differences at play in addition to gender and income differences.

The gender and income differences in the prevalence of tobacco use appear to reflect the global pattern of the tobacco epidemic in the general population, which is now progressing towards middle and lower income countries, and is beginning and declining earlier in males than females (491, 492). Overall, the highest prevalence and the largest gender differences in prevalence were observed in middle and low income countries, which are at earlier stages of the tobacco epidemic. By contrast, both male and female medical doctors in HIC, most of which are at the later stages of the epidemic, have the lowest prevalence.

Interestingly, female nurses had a higher prevalence compared to female doctors in HIC and UMIC, while the opposite pattern was found in middle and low income countries where female doctors had a higher prevalence compared to female nurses. A positive association between tobacco use and socioeconomic status was found previously among older professional women in some LMLIC (493) which may explain the higher prevalence in female doctors compared to nurses in these countries.

Female doctors and nurses in middle and low income countries appear to have higher prevalence compared with their counterparts in the general population according to the WHO prevalence data (Table 5.14). Similarly, male doctors in lower middle and low income countries also appear to have a higher prevalence than males in the general population.

Country level comparisons showed that male HCWs in HIC were the only group that had a lower prevalence compared with their counterparts in the general population, while in other countries the prevalence rates in both male and female HCWs were similar or higher compared with their counterparts in the general population.

Despite some limitations of data (WHO prevalence data were more recent than HCW data), these finding seems to confirm the hypothesis that similarly to high income countries, the smoking epidemic in low and middle income countries starts in more affluent socioeconomic groups, e.g. health professionals, before it spreads to the rest of the population, and begins to decline in males before females in later stages of the epidemic.

These findings offer cause for concern as many middle and low income countries (20) have fewer tobacco control measures in place and inadequate provision of cessation support, and any further increases in prevalence are likely to be mirrored in the HCWs population of these countries. There have already been increases in global prevalence of smoking among men, particularly in low and middle income countries (15, 492, 494).

Offering support to HCWs to stop using tobacco is a priority recommendation of the FCTC Article 14 guidelines. Countries' healthcare systems should play a central role in provision of cessation support to all tobacco users (141). Further, tobacco treatment and preventive measures specifically targeting HCWs should be a priority in all countries, along with measures to reduce gender and socioeconomic differences in tobacco use. Work place interventions for HCWs who smoke may include developing a smoking cessation policy and restriction on smoking while at work and provision of cessation support. NICE evidence based recommendations on supporting secondary care healthcare workers to stop smoking include advising all staff who smoke to stop, offering in-house cessation support (e.g. self-help materials, individual or group behavioural counselling, pharmacotherapy), allow staff to attend stop smoking services during working hours without loss of pay, advise those who do not want to stop

to use licensed nicotine-containing product to help them abstain during working hours (495).

Table 5.14 Male and female prevalence of tobacco use in medical doctors compared with the general population according to WHO data for 2012

WB income group	General population, %		Medical doctors,% (95 % CI)		Nurses, % (95 % CI)	
	Males	Females	Males	Females	Males	Females
LMLIC	32.4	3	45 (26-64)	10 (1-20)	0 (0-66)	7 (3-13)
UMIC	42.7	5.2	35 (32-39)	13 (11-16)	47 (37-57)	24 (18-30)
HIC	32.8	17.8	19 (15-22)	12 (9-14)	29 (26-32)	21 (16-25)
Global	36.1	6.8	29 (25-32)	12 (10-13)	28 (18-37)	18 (14-22)

HCWs= healthcare workers; WB= World Bank; HIC=high income countries; UMIC=upper middle income countries; LMLIC=lower middle and low income countries.

5.5.2 Strengths and limitations

A number of limitations need to be considered. There were 53 potentially eligible studies excluded from the review because it was not practically possible to access or translate them. Potential biases may arise due to selected studies not being evenly distributed across income groups or occupation. The majority of studies were from HIC, while only 12% were from LMLIC. The majority of occupations represented in the studies were medical doctors, mixed HCWs and nurses while dentists, pharmacists and allied HCWs were represented in less than 10% of studies. Furthermore, the majority of studies were of

poor quality due to small sample sizes, low response rates and tobacco use not clearly defined and measured. Despite the large number of studies included in the review, only 33% had nationally representative samples; while in the majority data were collected in one setting. There were relatively fewer recent studies, with the most recent ones reporting prevalence data from 2014. There was a high heterogeneity (above 90%) in all meta-analyses, including the sub-group analyses, which suggests high variability in study populations and approaches.

Individual categories of HCWs were not homogenous, for example studies included in the medical doctor category included professional groups such as cardiology (325, 333, 383) and respiratory physicians (364, 365, 417) who may reasonably be expected to have a lower tobacco use prevalence than other specialties which have a less clear link with smoking, thus potentially biasing the results.

There were variations in smoking data collection and reporting. The overall prevalence rates reported in studies with large gender difference (for example China) should be interpreted with caution.

In all studies tobacco use was self-reported; 66% used self-administered anonymous questionnaires to verify smoking status. While self-reported smoking status was shown to be accurate in most

observational studies (496) under-reporting of smoking in female participants due to cultural or social norms in some countries (326) or in countries with a growing popularity in water pipe smoking as this form of tobacco use is not perceived as harmful or addictive (497) is a concern and results should be considered accordingly.

5.5.3 Conclusion

Despite wide variations in prevalence of tobacco use among HCWs by country income level, gender and health profession, there are no evidence of significant recent declines. This is a cause for concern due to the critical role HCWs play in advising tobacco users to stop. In middle and low income countries the prevalence of tobacco use among HCWs is no lower than that in the general population and in some professions is very high indeed. This presents a particular challenge for countries where smoking prevalence is already high and/or is projected to increase. The Article 14 Guidelines of the WHO Framework Convention on Tobacco Control (132) recommends that HCWs record patients' tobacco use and provide at least brief smoking cessation advice. Health professionals who use tobacco are unlikely to fulfill this obligation or even if they did, their own tobacco dependence would undermine the authority and credibility of cessation advice.

This review demonstrates that monitoring HCWs tobacco use has been seriously neglected; there was a predominance of poor quality studies, very few were up-to-date and a number of occupational categories were lacking in data. The lack of prevalence data on HCWs in low income countries highlights the need for global monitoring and possibly extending the WHO/CDC global surveys to include these occupational groups.

CHAPTER 6: Conclusions and future directions

6.1 Summary of findings

The overall findings of this thesis show that there has been little progress in the implementation of WHO FCTC Article 14 in recent years. Exploring the association between implementation of tobacco treatment measures and country income level demonstrated that the implementation of most measures decreased with country income level and was particularly insufficient in low and middle income countries where substantial gaps in treatment provision were identified.

Development of tobacco treatment strategies and guidelines seems to be a low priority for the majority of countries and particularly for low income countries. These findings suggest that cost, real or perceived, is the main limiting factor for the implementation of Article 14.

The implementation of Article 14 recommendations concerning tobacco use among HCWs was investigated in two ways, first, by examining national tobacco treatment guidelines content for specific recommendations, and secondly, by obtaining prevalence estimates of tobacco use by occupation, gender and country income level. The findings revealed that tobacco use among health professionals is a

seriously neglected area, with only a handful of national tobacco treatment guidelines addressing the issue. Declines in prevalence among HCWs in high and middle income countries, but not in low income countries, between 2000 and 2014 has meant that the overall prevalence among HCWs in low income countries is becoming similar to that in their counterparts in high and middle income countries.

6.1.1 Tobacco treatment infrastructure

Core tobacco treatment infrastructure measures recommended by Article 14 were implemented in only a minority of countries, with high income countries being more likely to have implemented these measures than middle and low income countries. A strong positive association with country income level was observed between implementation of a national tobacco treatment strategy, tobacco dependence treatment guidelines and a clearly identified budget for cessation.

While the implementation of tobacco treatment guidelines in clinical practice was outside the scope of this thesis, the findings that many guidelines documents are not easily accessible or up to date, suggest that their usefulness in clinical practice may be limited.

The implementation of other infrastructure measures such as mandatory recording of patients' tobacco use in medical notes and helping HCWs to stop using tobacco was also found to be low. Although the existing guidelines were evidence based, many lacked a formal endorsement and dissemination strategy, two thirds had not been updated for more than five years, and few followed the Article 14 recommendations to address tobacco use among HCWs. A number of countries had tobacco treatment guidelines funded by the pharmaceutical industry.

It was found that between 2012 and 2015, the number of countries with a clearly identified budget for tobacco dependence treatment increased by only 1%, while those with guidelines increased by 10%, and there were still no low income countries among them. Overall, these findings suggest that cost and the lack of funding for tobacco treatment were the main issues in implementing infrastructure measures.

6.1.2 Tobacco treatment provision

Although the prevalence of some form of tobacco treatment provision was found to be more frequent than the prevalence of tobacco treatment guidelines, it nevertheless showed wide variation by income level. For example, it was found that specialised tobacco treatment support was available predominantly in high income countries while in

the majority of low and middle income countries it was available in selected areas only and was partially or not free. Furthermore, brief advice was less integrated into existing services and access to cessation support in various healthcare settings was more limited in low and middle income countries. The availability of NRT was less widespread in low and middle income countries and the availability of other cessation medications was also limited. Except for cytisine, other cessation medications including NRT, were not affordable in low income countries.

The findings showed that a number of countries had treatment provision without having developed tobacco dependence treatment guidelines. While the lack of detailed data on the type of treatment provision in the absence of treatment guidelines precludes knowing the exact nature and effectiveness of such treatment, it should be stressed that tobacco dependence treatment needs to be evidence based to be effective. In this respect official national tobacco dependence treatment guidelines are an important prerequisite as they provide scientific information on various tobacco cessation approaches and medications as well as appropriate treatment options for various groups of tobacco users, and can also serve as a training manual for practitioners.

6.1.3 Tobacco use among health professionals

The overall prevalence of tobacco use among HCWs by gender and income level was found to reflect the global pattern of the tobacco epidemic in the general population, with highest estimated prevalence in male medical doctors in middle income countries and female nurses in high and middle income countries, and lowest in male medical doctors in high income and female nurses in low income countries.

In addition to gender and income differences in prevalence, there were occupational differences which may reflect socio-economic determinants of prevalence. While in high and middle income countries the prevalence of tobacco use was found to be generally higher in nurses than medical doctors, the inverse association was found in low income countries.

Tobacco use among HCWs was found to be addressed in only a handful of tobacco dependence treatment guidelines. Given that tobacco use in this population was found to be widespread and showing no significant decline, the findings demonstrate that this is a seriously neglected area of Article 14 implementation.

6.2 Implications

The findings of this thesis strongly suggest that while the implementation of Article 14 varies markedly between countries, country income level remains a significant factor in the level of implementation. It was hardly surprising that the majority of low and lower-middle income countries in the sample did not have a designated budget for tobacco dependence treatment and were less likely to implement treatment measures. However, the findings that many upper-middle and high income countries did not have a treatment budget either, suggests that there are other factors, apart from affordability, implicated in Article 14 implementation.

The finding that the majority of countries had not developed tobacco treatment guidelines yet, and those that had developed guidelines did so with financial support from government or other public health organization, suggest that strong government and public support for the implementation of Article 14 is essential. Lack of government funding might be the reason why some countries undertook tobacco treatment guidelines development with financial support from the pharmaceutical industry even though the Article 14 guidelines clearly state that the national tobacco treatment guidelines should be protected from commercial and other vested interests. The involvement of pharmaceutical industry in developing tobacco treatment guidelines may influence their content by favouring one treatment approach over the other, for example pharmacological over behavioural support, thus

undermining their usefulness. Given the low affordability of cessation medications in low and middle income countries, this may result in ineffective treatment.

Securing funding for tobacco dependence treatment would also require a strong political will and leadership skills. As more countries are now implementing tobacco control measures, including FCTC Article 6 (raising tax and price of tobacco products), it would be expected that some of the tax revenues would be earmarked and allocated to tobacco dependence treatment. This has hardly been the case as many countries struggle to pass the required legislation due to delays caused mostly by the tobacco industry lobbying of government officials. Tobacco industry interference with the implementation of tobacco control measures in low and middle income countries is particularly damaging as it seriously undermines their ability to raise money for treatment from tobacco price and tax increases (498-500). However, there are strategies to overcome such barriers, for example legislating earmarked tax policy within a short period of time thus leaving less time for the opposition to intervene (501, 502).

The low prevalence of tobacco use in some low income countries may also explain the lack of provision of tobacco dependence treatment and tobacco treatment not being seen as a priority. However, as cigarettes

are becoming more available and affordable in low and middle income countries as a result of tobacco industry tactics in a bid to expand its markets (192, 498, 500), low income countries need to urgently respond to these challenges by implementing affordable tobacco treatment measures. Funding for capacity building in low and middle income countries has been available through grants for training HCWs in tobacco cessation within initiatives such as Global Bridges (503), which may help countries in the short run. However, incorporating tobacco cessation into the training curricula of healthcare students in a sustainable way would require countries' own resources.

The finding that the majority of low and middle income countries have some tobacco treatment provision without having treatment guidelines suggests that when resources are limited developing evidence based guidelines is not a priority. However, although it is encouraging that countries have some treatment provision, the benefit is questionable if there is not a comprehensive system in place to support smokers to quit. This also raises the question about access to and affordability of treatment by all smokers. LMICs might be better off producing treatment guidelines that support provision of basic cessation support in clinical practice, such as screening patients for tobacco use, very brief advice, and recording smoking status in the first instance.

These measures have been shown to be globally affordable (59) and could be implemented relatively quickly. An effective implementation of other tobacco treatment interventions, including affordable stop smoking medications, would however require a comprehensive, coordinated approach at national level, which highlights the importance of having a national tobacco treatment strategy and evidence based guidelines for all stakeholders across the healthcare system.

Another major finding of this thesis is that the majority of treatment guidelines do not address tobacco use in HCWs and this area has been seriously neglected. Health professionals are at the forefront of combating the tobacco epidemic and their own tobacco dependence would negatively impact and seriously undermine efforts to implement tobacco treatment measures in the population. This is a cause for concern as a decline in prevalence would require a change in attitudes by HCWs towards smoking, education and provision of specific tobacco dependence treatment programmes specifically targeting HCWs who use tobacco, which may take years to achieve. In this respect, tobacco treatment guidelines themselves could be used more effectively to promote a smoke-free culture and attitudes towards smoking among HCWs.

The estimated prevalence of tobacco use among HCWs and across countries presented in this thesis suggests that despite some reductions in prevalence among HCWs in HIC and UMIC there has not been a significant decline in prevalence between 2000 and 2014. The findings that the prevalence of tobacco use in HCWs in low income countries at earlier stages of the tobacco epidemic seems to have become similar to that in their counterparts in high income countries is a serious cause for concern.

The limited prevalence data from low income countries indicates that tobacco use among HCWs is not monitored and the scale of the problem may be larger than the estimates suggest. Global surveillance of tobacco use among HCWs is essential, especially after the discontinuation of the WHO GHPSS.

The high prevalence of tobacco use among key health professional groups in low and middle income countries suggest that this may be another significant barrier to the implementation of FCTC Article 14 in these countries. While this could be a consequence of tobacco use not being perceived as a major health risk as well as inadequate tobacco treatment provision, the issue needs urgent action. Failure to address tobacco dependence among HCWs would result in further delays in implementation of Article 14. There is also a danger of creating a

chronic vicious circle in countries where there is lack of treatment support and key healthcare personnel, such as doctors and nurses, who are expected to promote tobacco cessation and help tobacco users to quit, are tobacco dependent.

The Article 14 guidelines recommend that countries should address tobacco use in HCWs by specific tobacco cessation programmes aimed at HCWs. Such programmes, however, were found to be rare in HICs which could be explained by a relatively lower prevalence of tobacco use in these countries and the wide availability of general population tobacco cessation treatment options.

In LMLIC, however, where the prevalence of tobacco use is high and appear to be increasing in both the general population and HCWs, helping HCW who use tobacco should be treated as a priority but needs to be accompanied by broader measures aimed to tackle population level prevalence, such as price increases, information and education about the health risks of smoking, restrictions of smoking in public places, hospitals and healthcare facilities.

Finally, the lack of progress in implementation of Article 14 may also reflect wider issues surrounding the implementation of the FCTC and the lack of enforcement and compliance mechanisms (504). Civil

society organisations could play a key role in future monitoring and accelerating the implementation of the FCTC and FCTC Article 14, in particular.

6.3 Methodological considerations and limitations

The findings presented in this thesis are based on a large sample of countries, including Parties and Signatories to the FCTC, including countries from all six WHO regions, representing high, upper middle, lower middle and low income economies.

Data collection spanned over a period of two years and involved a combined effort of many international organisations, professional networks and survey respondents, who provided information and their time at no cost. Dr Martin Raw's pre-existing links with numerous international organisations and colleagues played a crucial role in identifying suitable survey contacts and helped to achieve an excellent response rate from countries. As part of this exercise the database of international survey contacts was updated and expanded and a number of new contacts added.

As in the previous survey, the approach was one questionnaire per country completed by a named contact. The use of a named contact in charge of completing the questionnaire probably helped achieve a high response rate. The respondents were encouraged to verify their responses with colleagues or to suggest an alternative contact in case they were not able to provide the information. Although efforts were made to use the same respondents in each survey this was not practically possible. Given the mix of respondents from a variety of organisations and with different access to information, there is a possibility of bias. Although an effort was made to reduce reporting bias, due to lack of detailed data on the implementation of Article 14 it was not possible to verify the survey responses. Wherever possible, data were checked for consistency against the responses in the 2012 survey and any inconsistency resolved through communication with the respondents. Also, it was not practically possible to validate the survey responses against the actual guidelines content, given the length of the guidelines and the variety of languages in which they were written.

Although efforts were made to translate the survey questionnaire into four languages, occasionally there were misunderstandings of the wording, for example the use of the words “official” and “national” in the context of tobacco treatment strategy and guidelines. An important lesson learned from conducting this research was to use standardised

questionnaires and definitions in repeated surveys as changes in wording may lead to inconsistency in responses.

Despite the large number of countries that agreed to take part in the surveys and the high response rates, there were fewer respondents from low income countries. Lack of a designated person responsible for cessation in these countries could be one reason for this along with a lack of monitoring data on the implementation of Article 14. Although monitoring the implementation of the FCTC is FCTC Parties' obligation, this may not be a priority especially in low income countries. Some country representatives may not see any tangible benefits from taking part in surveys. Addressing these issues by better explaining the survey objectives and the role of the survey contacts may help improve the response rates from low income countries in future surveys.

Despite its limitations, collecting data from a large sample of international contacts can be used for monitoring the implementation of Article 14. This approach, despite being labour intensive and time consuming, is the best one for now as many countries do not have national collection systems for the purposes of monitoring the FCTC implementation apart from the Party Report system, whose shortcomings have been discussed. As discussed in Chapter 1, the

WHO FCTC Implementation Reports provide limited data on the implementation of Article 14.

There were limitations in attempting to access the national tobacco treatment guidelines. Firstly, it was not possible to access all guidelines as some were not available online. Secondly, since the guidelines were written in numerous languages it was not possible to translate all. The guidelines content review was therefore limited to guidelines for which translation was available.

The use of systematic review and meta-analysis to estimate the global prevalence of tobacco use in HCWs was also subject to certain limitations. Firstly, prevalence data were not available for all countries and occupations. The low quality of studies due to lack of representative or recent prevalence data might have affected the accuracy of estimates. There was a high variability of studies and high heterogeneity which could not be explained with study quality, country income level, and year of data collection, occupation, gender, and quality. The estimated prevalence, therefore, may not reflect the situation in individual countries or countries that were not included in the review.

6.4 Next steps

The findings of this thesis demonstrate the feasibility of collecting detailed data on the implementation of Article 14 to monitor progress over time (potentially every 4-5 years) using data from repeated surveys. Future research may also make use of the FCTC monitoring data to triangulate survey data at least for a sample of countries from different income groups. Future research may include in depth qualitative approaches to investigate the challenges and barriers to implementation of Article 14.

The findings of this thesis clearly demonstrate the need for monitoring tobacco use among HCWs, an important area of Article 14 implementation. One way of addressing this is developing a survey instrument similar to the WHO/CDC Global Health Professional student surveys that countries can use on a regular basis. Monitoring tobacco use in HCWs could also be included as a reporting requirement on the implementation of Article 14 in Parties' Implementation Reports.

Given that the majority of low and middle income countries have not developed treatment guidelines and strategy, further research may investigate the feasibility of affordability in developing tobacco cessation support in countries from different income groups, making use of the available tools and evidence (59, 505, 506).

6.5 Conclusions

The main conclusion of this thesis is that the implementation of Article 14 is slow and there is a widening gap in tobacco treatment provision between countries with different income level. There is much room for improvement in low and middle income countries where most of the world's tobacco users reside and where there is a growing unmet demand for cessation support. While the lack of resources and funding for cessation can be a barrier to implementation, there are a number of measures all countries can implement relatively quickly and at a low cost, and these should be explored as a matter of urgency. Countries need to address tobacco use among HCWs and implement cessation programmes specifically targeting HCWs who use tobacco as a priority in order to further tobacco control efforts directed at the general population.

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APPENDICES

APPENDIX I Tobacco Treatment Survey Questionnaires

Tobacco Treatment Questionnaire in English



Tobacco Treatment Survey 2015

Thank you very much for helping us with this survey. We think the questionnaire should take approximately 15 minutes. If you have any questions about the survey please email us.

Martin Raw martin@martinraw.com and Kapka Nilan msxkn4@nottingham.ac.uk on behalf of the survey team at Nottingham University (Rachael Murray) and King's College London (Ann McNeill).

Definitions of terms used in this survey can be found in the FCTC Article 14 guidelines:

http://www.who.int/fctc/Guidelines.pdf?ua=1

Under each question we have left space for comments if you wish to add any additional information or clarify your responses.

1) Contact information
Name:
Position:
Organisation:
Country:
Email:

2) Is there an officially identified person in government (or contracted by government) who is responsible for tobacco dependence treatment?	
Yes	
No	

3) Does your country have a clearly identified budget for tobacco dependence treatment?	
Yes	
No	

4) Does your country have an official, written, national tobacco treatment strategy?	
Yes	
No	
If yes please give a link and/or PDF if possible.	

5) Does your country have official national tobacco treatment guidelines?	
Yes	
No	

If yes, approximately what year were they published?
If yes please give a link and/or PDF if possible.

6) Does your country run mass media campaigns promoting cessation?	
Yes	
No	
If yes, please provide the year of the most recent campaign if known.	

7) Does your country offer help to healthcare workers and other relevant groups to stop using tobacco?	
Yes	
No	

8) Is it mandatory to record patients' tobacco use in medical notes in your country?	
Yes	
No	

9) Is brief advice integrated into existing services such as (but not limited to) primary care, tuberculosis, HIV/AIDs, etc?	
Yes	
No	
If yes, could you give some details, for example, which services.	

10) Are healthcare workers trained to give brief advice?	
Yes all	
Yes some	
No	
If yes, could you give some details, for example which groups are trained.	

11) Is tobacco cessation incorporated into the training curricula of healthcare students and workers?	
Yes all	
Yes some	
No	
If yes, could you give some details, for example, which groups are trained.	

12) Does your country have a national telephone tobacco quitline, free to callers?	
Yes, free national quitline or quitlines in all major regions of the country	
Yes, free national quitline but not tobacco only, it is part of a quitline that includes other issues	
Yes, free quitlines but only in selected regions of the country	
No	

If no please go to Q14

13) If you answered 'yes' to any of the telephone quitline questions		
	Yes	No
Does it have people answering always or almost always?		

Does it offer multiple sessions with counsellors calling back to offer support?		
Does it refer callers to local specialist treatment services?		
Does it offer information about tobacco cessation medications?		
Is the quitline number on tobacco packaging?		

14) Does your country offer a text messaging service or services to tobacco users?	
Yes	
No	

15) Does your country have specialised tobacco dependence treatment services (experts or units/clinics) offering individual or group support delivered by trained professionals?	
Yes, a network of treatment support covering the whole country	
Yes, treatment support but only in selected areas	
No	

If no please go to Q18; If yes please answer Q16 and Q17

16) Are these services free to users?	
Yes	
Partially	
No	
We realise the answer to this question may be complex; please give as much detail as possible.	

17) Does your country monitor the specialised treatment services (including numbers using the services and outcome)?	
Yes	
No	

18) Are the following medications available in your country?		
	Yes	No
NRT gum		
NRT patch		
Any other NRT		
Bupropion		
Varenicline		
Nortriptyline		
Cytisine (Tabex)		
Other (please give details):		

19) Are the following medications easily affordable to most tobacco users in your country?		
	Yes	No
NRT gum		
NRT patch		
Any other NRT		
Bupropion		
Varenicline		
Nortriptyline		
Cytisine (Tabex)		

20) In general is NRT more or less expensive than smoking in your country?	
More expensive	
Less expensive	
More or less the same	
Don't know	

21) Can tobacco users get help to stop smoking in the following settings?		
	Yes	No
General/family practice		
Pharmacists		
Dentists		
Hospitals		
Addiction services		
Work places		
Educational institutions		
Mental health units		
Prisons		
Traditional health practitioners / healers		
Please add any other relevant groups/settings:		

22) Are electronic cigarettes available in your country?		
	Yes	No
Through the internet		
In ordinary shops		
Over-the-counter in pharmacies		

As a licensed medication for tobacco dependence treatment		

23) Are the following tobacco products widely used in your country?		
	Yes	No
Cigarettes		
Water pipes (shisha, narghile, hookah)		
Smokeless tobacco (nasal, oral)		
Other (please name and/or describe)		

24) What in your opinion are the main barriers or challenges to developing further tobacco dependence treatment in your country?

25) Would you be willing to be interviewed by us about tobacco dependence treatment in your country?	
Yes	
No	

26) Please add here any further comments you would like to make, or data, including any relevant documents and references.
Survey complete; thank you very much indeed.

Tobacco Treatment Questionnaire in Spanish



Cuestionario sobre el tratamiento de la dependencia al tabaco 2015

Agradecemos su ayuda por participar en esta encuesta. Estimamos que contestar el siguiente cuestionario le tomará aproximadamente 15 minutos. Si tiene alguna pregunta respecto del cuestionario no dude en contactarnos por email en cualquiera de las siguientes direcciones:

Martin Raw martin@martinraw.com y Kapka Nilan msxkn4@nottingham.ac.uk en nombre del equipo de investigación de las Universidades de Nottingham (Rachael Murray) y King's College London (Ann McNeill).

Las definiciones y términos utilizados en este cuestionario provienen de las directrices para la aplicación del artículo 14 del Convenio Marco para el Control del Tabaco de la OMS

http://www.who.int/fctc/guidelines/guidelines_art14_dec8_es.pdf?ua=1

Se ha dejado un espacio debajo de cada pregunta por si usted quisiera agregar información o comentar cualquiera de sus respuestas.

1) Datos personales

Nombre:
Puesto:
Institución/Organización:
País:
Dirección de correo electrónico:

2) ¿Hay alguna persona en el gobierno (o contratada por el gobierno) que sea responsable de los tratamientos de la dependencia al tabaco en su país?	
Si	
No	

3)¿Existe en su país un presupuesto definido para el tratamiento de la dependencia al tabaco?	
Si	
No	

4) ¿Existe en su país un plan oficial escrito para el tratamiento de la dependencia al tabaco?	
Si	

No	
En caso afirmativo, por favor adjuntar PDF/ o indicar un link.	

5) ¿Existen en su país guías oficiales para el tratamiento de la dependencia al tabaco?	
Si	
No	
En caso de que existan guías, ¿En qué año fueron publicadas?	
En caso afirmativo, por favor adjuntar PDF/ o indicar un link.	

6) En su país ¿se realizan campañas de comunicación en los medios que promuevan el dejar de fumaren la población?	
Si	
No	
En el caso de que existan este tipo de campañas, por favor señale el año de la campaña más reciente.	

7) En su país ¿se le ofrece al personal de salud y otros grupos relevantes ayuda para dejar de fumar?	
Si	
No	

8) En su país, ¿Es obligatorio registrar en la historia clínica de los pacientes el consumo de tabaco?	
Si	
No	

9) En su país ¿está el consejo breve en materia de tabaquismo integrado (pero no restringido) en los servicios como centros de salud primaria, tuberculosis y el HIV/SIDA o algún otro servicio de este tipo?	
Si	
No	
En caso afirmativo, ¿Podría detallar qué servicios?	

10) ¿Están los agentes de salud entrenados para ofrecer consejo breve?	
Si, todos	
Si, algunos	
No	
En caso de contestar si a esta pregunta, ¿podría especificar qué grupos están entrenados para esto?	

11) ¿Está la cesación del tabaco integrado en los programas de formación de los estudiantes y trabajadores de salud?

Si, en todos los programas de formación	
Si, en algunos programas de formación	
No	
En caso de contestar si a esta pregunta, ¿podría especificar qué grupos están entrenados para esto?	

12) ¿Existe en su país un servicio telefónico, gratuito y de ámbito nacional, para ayudar a dejar de fumar?	
Sí, una línea nacional o varias, con cobertura en la mayoría de regiones del país	
Sí, una línea nacional gratuita pero no es específico para dejar de fumar	
Sí, una línea gratuita pero existe sólo en algunas regiones del país	
No	

Si la respuesta es "no", continúe con la pregunta número 14

13) Si su respuesta es "si" a alguna de las preguntas sobre líneas de ayuda telefónica		
	Si	No
¿Hay operadores para contestar los llamados siempre o casi siempre?		
¿Ofrecen varias sesiones con consejeros que devuelven las llamadas para brindar apoyo?		
¿Derivan a un servicio de tratamiento especializado local?		

¿Brindan información relacionada con los medicamentos que ayudan a dejar de fumar?		
¿Aparece el número de la línea telefónicas en el paquete de los productos de tabaco?		

14) ¿Ofrece su país servicio de mensajería de texto para los consumidores de tabaco?	
Si	
No	

15) En su país ¿existen servicios especializados (expertos, unidades o centros) para el tratamiento de la dependencia al tabaco que brinden apoyo individual o grupal impartido por profesionales entrenados?	
Si, una red de tratamiento de apoyo que abarca todo el país	
Si, tratamiento de apoyo pero solo en ciertas áreas del país	
No	

Si la respuesta es “no”, pase a la pregunta número 18 y si es "si" responda las preguntas número 16 y 17

16) ¿Son los servicios gratuitos para los usuarios?	
Si	
Pago parcial/subvencionados	
No	
Entendemos que la respuesta a esta pregunta puede ser compleja, por favor proporcione la mayor cantidad de detalles posibles.	

17 ¿En su país, se realiza monitoreo de los servicios especializados de tratamiento del tabaquismo (tasa de uso y resultados)?	
Si	
No	

18) En su país ¿se encuentran disponibles los siguientes medicamentos?		
	Si	No
Chicles de nicotina		
Parches de nicotina		
Otros productos de terapia de reemplazo de nicotina		
Bupropión		
Vareniclina		
Nortriptilina		
Citisina (Tabex)		
Otros (especificar):		

19) Los siguientes medicamentos ¿son de fácil acceso para la mayoría de los fumadores en su país?		
	Si	No
Chicles de nicotina		
Parches de nicotina		
Otros productos de terapia de reemplazode nicotina		
Bupropión		
Vareniclina		
Nortriptilina		
Citisina (Tabex)		

20) En general en su país, ¿diría usted que la terapia de reemplazo de nicotina es más caro o más barato que fumar?	
Más caro	
Más barato	
Precio similar	
No sabe	

21) ¿De la siguiente lista de servicios, ¿cuáles prestan ayuda a fumadores para dejar de fumar?		
	Si	No
Medicina general/ medicina familiar / Consultorio		
Farmacéuticos		
Dentistas		
Hospitales		
Centros para el tratamiento de las adicciones		
Lugar de trabajo		
Instituciones educativas		
Centros de salud mental		
Prisiones		
Curadores/Sanadores		
Por favor señale si existen otros grupos o centros en los que se pueda recibir ayuda para dejar de fumar:		

22) ¿Se encuentran disponibles los cigarrillos electrónicos en su país?		
	Si	No

Se adquieren por internet		
Se adquieren en cualquier tienda		
Se adquieren en farmacias		
Se adquierencomo medicamentos prescritos para el tratamiento de la dependencia al tabaco		

23) Los siguientes productos de tabaco, se consumen abiertamente en su país?		
	Si	No
Cigarrillos		
Pipas de agua (shisha, narghile, hookah)		
Tabaco sin humo (Tabaco de mascar, nasal, etc)		
Otros (describa):		

24) En su opinión, ¿cuáles son los principales obstáculos o desafíos para desarrollar aún más el tratamiento de la dependencia al tabaco en su país?

25) ¿Estaría usted dispuesto a ser entrevistado por nuestro grupo de investigadores sobre temas relacionados con el tratamiento de la dependencia al tabaco en su país?	
Si	
No	

26) Por favor escriba aquí cualquier comentario o datos adicionales que desee hacer, incluyendo documentos o bibliografía relevante.

Fin de la encuesta. Muchas gracias.

Tobacco Treatment Questionnaire in French



Enquête Traitement Tabac 2015

Merci beaucoup de nous aider dans cette enquête. Nous pensons que le questionnaire devrait prendre environ 15 minutes. Si vous avez des questions au sujet de l'enquête n'hésitez pas à nous envoyer un courriel.

Martin Raw (martin@martinraw.com) et Kapka Nilan (msxkn4@nottingham.ac.uk) de la part de l'équipe responsable de l'enquête aux universités de Nottingham (Rachael Murray) et de King's College London (Ann McNeill).

Les définitions des termes utilisés dans cette enquête peuvent être consultées dans les Directives pour l'application de l'Article 14 de la CCLAT :

http://www.who.int/fctc/guidelines/guidelines_art14_cop4_8_fr.pdf?ua=1

Sous chaque question, nous avons laissé un espace pour les commentaires si vous souhaitez ajouter des informations supplémentaires ou clarifier vos réponses.

1) Vos coordonnées

Nom:

Position:
Institution/Organisation:
Pays:
Courriel:

2) Y a-t-il une personne au gouvernement (ou sous contrat du gouvernement) officiellement en charge des questions sur le traitement de la dépendance au tabac?	
Oui	
Non	

3) Est-ce que votre pays a un budget clairement identifié pour les traitements?	
Oui	
Non	

4) Votre pays a-t-il une stratégie nationale officielle pour promouvoir l'arrêt du tabac et proposer le traitement de la dépendance au tabac?	
Oui	
Non	
Si oui, donnez-nous s'il vous plaît un lien et/ou un PDF, si possible.	

5) Votre pays a-t-il des recommandations de bonnes pratiques cliniques nationales pour l'aide à l'arrêt du tabac?

Oui	
Non	
Si oui, quelle année environ ont-elles été publiés ?	
Si oui, donnez-nous s'il vous plaît un lien et / ou PDF si possible.	

6) Votre pays fait-il des campagnes de masse pour promouvoir l'arrêt du tabac?	
Oui	
Non	
Si oui, et si vous la connaissez, indiquez s'il vous plaît l'année de la campagne la plus récente.	

7) Est-ce que votre pays offre aux soignants et à d'autres groupes la possibilité de les aider à arrêter de fumer?	
Oui	
Non	

8) Est-ce que votre pays possède un système obligatoire afin d'enregistrer le tabagisme des patients dans le dossier médical?	
Oui	
Non	

9) Le conseil bref est-il intégré dans les services comme ceux prenant en charge (mais pas seulement ceux-ci) la médecine générale, la tuberculose, le VIH/SIDA, etc ... ?	
Oui	
Non	
Si oui, pourriez-vous nous donner quelques détails, par exemple, quels services?	

10) Les professionnels de la santé reçoivent-ils une formation pour délivrer un conseil bref?	
Oui, tous	
Oui, certains	
Non	
Si oui, pourriez-vous nous donner quelques détails, par exemple, quels professionnels reçoivent une formation?	

11) Est-ce que l'arrêt du tabac fait partie de la formation initiale des professionnels de la santé?	
Oui, tous	
Oui, certains	
Non	
Si oui, pourriez-vous nous donner quelques détails, par exemple, quels professionnels reçoivent une formation?	

12) Votre pays possède-t-il une ligne d'aide à l'arrêt téléphonique gratuite?	
Oui, une ligne d'aide à l'arrêt nationale ou des lignes d'aide à l'arrêt gratuites dans les principales régions	
Oui, une ligne d'aide à l'arrêt nationale, mais elle n'est pas dédiée uniquement à l'arrêt du tabac, elle inclut aussi d'autres interventions non liées au tabac	
Oui, des lignes d'aide à l'arrêt gratuites, mais seulement dans quelques régions	
Non	

Si non, allez directement à la question 14

13) Si oui,		
	Oui	Non
Y a-t-il toujours, ou presque toujours une personne qui répond (et pas un répondeur) ?		
Offre-t-elle des séances multiples avec des tabacologues qui rappellent et offrent un suivi ?		
Renvoie-t-elle le cas échéant vers un tabacologue local ?		
Propose-t-elle des informations sur les médicaments d'aide à l'arrêt ?		
Le numéro de téléphone est-il inscrit sur les paquets de tabac?		

14) Est-ce que votre pays offre un service de messagerie texte (texto) aux consommateurs de tabac?	
Oui	
Non	

15) Votre pays a-t-il des centres spécialisés dans l'aide à l'arrêt du tabac (experts ou unités/cliniques) proposant une aide individuelle ou en groupe réalisée par des professionnels formés?	
Oui, un réseau d'aide à l'arrêt dans l'ensemble du pays	
Oui, un réseau d'aide à l'arrêt, mais seulement dans certaines régions	
Non	

Si non, allez directement à la question 18, si oui, répondez aux questions 16 et 17

16) Ces services sont-ils gratuits pour les utilisateurs?	
Oui	
Partiellement	
Non	
Nous nous rendons compte que la réponse à cette question peut être complexe; donnez s'il vous plaît autant de détails que possible.	

17) Est-ce que votre pays contrôle l'utilisation de l'aide à l'arrêt du tabac (incluant les numéros qui appellent les services et les résultats)?	
Oui	
Non	

18) Ces médicaments sont-ils disponibles dans votre pays ?		
	Oui	Non
TNS gomme		

TNS patch		
autre TNS		
Bupropion		
Varénicline		
Nortriptyline		
Cytisine(Tabex)		
Autre (merci de donner des détails)		

19) Ces médicaments sont-ils accessibles (bon marché) pour la plupart des fumeurs de votre pays?		
	Oui	Non
TNS gomme		
TNS patch		
autre TNS		
Bupropion		
Varénicline		
Nortriptyline		
Cytisine(Tabex)		

20) En général, le TNS est-il plus ou moins coûteux que de fumer dans votre pays?	
Plus cher	

Moins cher	
Plus ou moins le même	
Je ne sais pas	

21) Les fumeurs peuvent-ils se faire aider dans les lieux suivants?		
	Oui	Non
Généralistes		
Pharmaciens		
Dentistes		
Hôpitaux		
Centres traitant les Addiction		
Au travail		
Dans les lieux d'enseignement (écoles...)		
Dans les établissements de santé mentale		
Dans les prisons		
Praticiens de médecines traditionnelles		
Dans d'autres groupes /dans d'autres lieux:		

22) Les cigarettes électroniques sont-elles disponibles dans votre pays?		
	Oui	Non
Sur internet		
Peuvent être achetées dans des boutiques ou au supermarché		

Peuvent être achetées sans ordonnance en pharmacie		
Comme un médicament autorisé pour le traitement de la dépendance au tabac		

23) Les produits du tabac suivants sont-ils largement utilisés dans votre pays?		
	Oui	Non
Cigarettes		
Chicha, narguilé, etc...		
Du tabac non-fumé (prise nasale, orale)		
Autres (merci de donner le nom et/ou décrivez)		

24) Quels sont à votre avis les principaux obstacles ou défis pour développer davantage le traitement de la dépendance au tabac dans votre pays?

25) Seriez-vous prêt à être interviewé par nous sur le traitement de la dépendance de tabac dans votre pays?	
Oui	
Non	

26) Merci d'indiquer ici les commentaires ou remarques que vous souhaiteriez faire, incluant toute(s) référence(s) que vous jugeriez utile(s).

L'enquête est terminée. Merci beaucoup de votre collaboration

Tobacco Treatment Questionnaire in Russian



Неофициальный перевод

Исследование употребления табака 2015

Большое Вам спасибо за помощь в проведении этого исследования. Мы предполагаем, что заполнение вопросника займёт около 15 минут. Если у Вас возникнут какие-либо вопросы, то пожалуйста напишите нам электронное письмо по следующим адресам: Martin Raw martin@martinraw.com и Kapka Nilan msxkn4@Hetttingham.ac.uk , которые представляют исследовательскую команду Нотингемского Университета (Рэйчел Мюррей) и Королевского колледжа Лондона (Энн МакНейл).
Определения и термины, которые используются в этом исследовании, можно найти в статье 14 руководства FCTC по электронному адресу: http://www.who.int/fctc/Guidelines.pdf?ua=1 Если Вы желаете дополнить, добавить какую-либо информацию или объяснить свой

1) Контактная информация
Фамилия и имя:
Должность:
Организация:
Страна:
Адрес электронной почты:

2) Есть ли лицо, ответственное за борьбу с табачной зависимостью, которое официально назначенно Правительством (или нанято Правительством)?	
Да	
Нет	

3) Есть ли в стране отдельная строка бюджета по борьбе с табачной зависимостью?	
Да	
Нет	

4) Есть ли в стране официальная, записанная на бумаге, национальная стратегия по борьбе с табачной зависимостью?	
Да	
Нет	
Если «Да», пожалуйста, по возможности, дайте адрес интернет- ссылки и/или файл в PDF-формате.	

5) Есть ли в стране официальные национальные руководства по борьбе с табачной зависимостью?	
Да	
Нет	
Если «Да», то, примерно, в каком году они были опубликованы?	
Если «Да», пожалуйста дайте адрес интернет- ссылки и/или файл в PDF-формате.	

6) Запустила ли Ваша страна в средствах массовой информации кампанию по продвижению отказа от табакокурения?	
Да	
Нет	
Если «Да», пожалуйста, укажите год последней известной Вам информационной кампании.	

7) Помогает ли Ваша страна работникам здравоохранения и другим соответствующим группам в прекращении потребления табака?	
Да	
Нет	

8) Является ли в Вашей стране обязательной запись об употреблении табака в медицинские карты?	
Да	
Нет	

9) Даются ли краткие рекомендации об отказе от табакокурения при оказании таких услуг (но не ограниченных ими), как первичная медицинская помощь, лечение туберкулёза и ВИЧ/СПИД и т.п.?

Да	
Нет	
Если «Да», могли бы Вы привести некоторые подробности, например, при оказании каких именно услуг даются такие рекомендации.	

10) Обучены ли работники здравоохранения давать краткие рекомендации пациентам?	
Да, все	
Да, некоторые из них	
Нет	
Если «Да», могли бы Вы привести некоторые подробности, например какие именно группы обучены.	

11) Включена ли тема отказа от табакокурения в программы обучения студентов-медиков и работников здравоохранения?	
Да, все	
Да, некоторые из них	
Нет	
Если «Да», могли бы Вы привести некоторые подробности, например какие именно группы обучены.	

12) Есть ли в стране на национальном уровне бесплатный для звонящих телефон доверия по проблемам употребления табака?	
Да, есть телефон доверия на национальном уровне или в основных регионах страны.	

Да, бесплатная телефонная линия на национальном уровне есть, но она работает не только по проблемам употребления табака, а и по другим вопросам.	
Да, бесплатная телефонная линия есть, но только в отдельных регионах страны	
Нет	

Если «Нет», то пожалуйста переходите сразу к 14-му вопросу

13) Если Вы ответили «Да», то ответьте на следующие вопросы		
	Да	Нет
Есть люди, которые дают ответы по линии постоянно или почти постоянно?		
Предлагаются ли многократные сессии, при которых консультанты перезванивают, предлагая свою поддержку?		
Рекомендуется ли звонящим обращаться к местным специалистам, представляющим услуги по лечению?		
Рекомендуется ли звонящим медикаменты, помогающие отказаться от употребления табака?		
Указан ли номер телефона «горячей линии» на упаковках табачных изделий?		

14) Представляет ли Ваша страна потребителям табака услугу или услуги по обмену текстовыми сообщениями?	
Да	
Нет	

15) Есть ли в Вашей стране специализированная служба лечения от табачной зависимости (эксперты или отделения/клиники), которая предлагает индивидуальную или групповую поддержку обученных профессионалов?	
Да, сеть лечебной поддержки охватывает всю страну	
Да, лечебная поддержка есть только в отдельных регионах	
Нет	

Если «Нет», пожалуста перейдите к 18-му вопросу; **Если «Да», пожалуйста, ответьте на 16 и 17 вопросы.**

16) Эти службы бесплатны для пользователей?	
Да	
Частично	
Нет	
Мы полагаем, что ответ на этот вопрос может быть сложным, пожалуста приведите как можно больше подробностей.	

17) Ваша страна осуществляет мониторинг специализированных лечебных служб (включая число людей, воспользовавшихся услугами и результаты этих услуг)?	
Да	
Нет	

18) Доступны ли в Вашей стране следующие медикаменты?		
	Да	Нет
Замещающие никотин лечение – жевательная резинка		
Замещающие никотин лечение – пластырь		
Какие либо другие средства лечения - замещающие никотин		
Бупропин – Bupropion		
Вареникlайн – Varenicline		
Нотрипинлайн – Nortriptyline		
Цитистин (таблетированный) – Cytisine (Tabex)		
Другие (пожалуйста, дайте подробности):		

19) В Вашей стране для потребителей табака доступны ли по цене следующие медикаменты?		
Замещающие никотин лечение – пластырь	Да	Нет
Какие либо другие средства лечения - замещающие никотин		

Бупропин – Bupropion		
Варениклайн – Varenicline		
Нотрипинлайн – Nortriptyline		
Цитистин (таблетированный) – Cytisine (Tabex)		

20) Никотинозамещающие медикаменты в Вашей стране дороже или дешевле чем табачные изделия?	
Дороже	
Дешевле	
Примерно одинаковые по цене	
Не знаю	

21) Могут ли потребители табака получить помощь в прекращении употребления табака в следующих учреждениях?		
	Да	Нет
У врачей общей практики или семейных врачей		
У фармацевтов		
У дантистов		
В госпиталях		
В наркологической службе		
На рабочем месте		
В образовательных учреждениях		
В учреждениях психиатрической помощи		
В учреждениях пенитенциарной системы		
У народных целителей / хиллеров		

Добавте любые другие соответствующие группы / учреждения:

22) В Вашей стране доступны электронные сигареты?		
	Да	Нет
Через Интернет		
В обычных магазинах		
Без рецепта в аптеках		
Как лицензированный для лечения табачной зависимости медикамент		

23) Какие из следующих табачных продуктов широко используются в Вашей стране?		
	Да	Нет
Сигареты		
Кальяны (шиша, наргиле, хуках)		
Бездымный табак (нас и другие оральные табаки)		
Другое (пожалуйста, укажите название и/или опишите)		

24) По Вашему мнению, какие в Вашей стране есть основные барьеры или вызовы для дальнейшего развития мер по лечению табачной зависимости?

25) Желали бы Вы дать нам интервью о лечении от табачной зависимости в Вашей стране?	
Да	

Нет	

26) Пожалуйста, добавьте здесь любые комментарии, которые сочтёте необходимыми, или данные, включая любые соответствующие документы и ссылки.

Анкета заполнена; большое Вам спасибо за помощь в проведении исследования.

Tobacco Treatment Survey invitation email

Dear (Dear Dr)

Francais ci-dessous / Espanol abajo

Thank you very much for agreeing to help us with the Tobacco Treatment Survey 2015. The questionnaire will take approximately 15 minutes to complete.

Please find attached the survey questionnaire in English, French and Spanish. Please save the questionnaire on your computer before completing it, then return it by email.

Alternatively, a web based version of the survey in English can be accessed from the following link:

https://nottingham.onlinesurveys.ac.uk/tobacco_treatment_survey2015

Please note that only one questionnaire per country should be submitted.

Please do not hesitate to contact us if you have any questions.

Thank you very much.

Martin Raw and Kapka Nilan

On behalf of the research team at Nottingham University (Dr Rachael Murray) and King's College London (Professor Ann McNeill), UK

Espanol

Estimado / Estimada (Estimado Dr / Estimada Dra)

Muchas gracias por haber accedido a ayudarnos con la encuesta 2015 sobre Tratamiento del Tabaquismo. Completar este cuestionario le tomará aproximadamente 15 minutos.

Se adjunta el cuestionario de la encuesta en Inglés, Francés y Español. Por favor, guarde el cuestionario en su ordenador antes de terminarlo, a continuación, envíelo por correo electrónico.

Alternativamente, se puede acceder a una versión, en inglés, de la encuesta desde el siguiente enlace:

https://nottingham.onlinesurveys.ac.uk/tobacco_treatment_survey2015

Tenga en cuenta que un sólo cuestionario por país deberá ser presentado.

Por favor, no dude en ponerse en contacto con nosotros si tiene alguna pregunta.

Muchas gracias.

Martin Raw e Kapka Nilan

En nombre del equipo de investigación de la Universidad de Nottingham (Dr Rachael Murray) y el Kings College de Londres (Profesor Ann McNeill), del Reino Unido.

Francais

Cher / Chère (Cher Dr / Chère Dr)

Merci beaucoup d'avoir accepté de nous aider dans l'Enquête Traitement Tabac 2015. Le questionnaire devrait prendre environ 15 minutes à remplir.

Veuillez trouver ci-joint le questionnaire en anglais, en français et en espagnol. Merci de sauvegarder le questionnaire sur votre ordinateur avant de le remplir, puis de le retourner par courriel.

Alternativement, une version en ligne de l'enquête en anglais est accessible à partir du lien suivant :

https://nottingham.onlinesurveys.ac.uk/tobacco_treatment_survey2015

Veuillez s'il vous plaît noter, qu'un seul questionnaire par pays doit être soumis.

N'hésitez pas à nous contacter si vous avez des questions.

Merci beaucoup pour votre collaboration.

Martin Raw et Kapka Nilan

de la part de l'équipe responsable de l'enquête aux universités de Nottingham (Dr Rachael Murray) et de King's College London (Professeur Ann McNeill), Royaume-Uni

Martin Raw PhD

Project Director: *Tools to enhance tobacco cessation support*

Special Lecturer, UK Centre for Tobacco and Alcohol Studies, University of Nottingham, UK

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martin@martinraw.com

APPENDIX IITobacco Treatment Guidelines Survey Questionnaires

Tobacco Treatment Guidelines Questionnaire in English



Tobacco Treatment Guidelines Survey 2016

We are sending this questionnaire because we believe that your country has treatment guidelines. If this is incorrect we would appreciate it if you could tell us.

We think the questionnaire will take 10 to 15 minutes to complete. Thank you very much.

Kapka Nilan (msxkn4@nottingham.ac.uk) and Martin Raw (martin@martinraw.com) on behalf of the survey team at Nottingham and London Universities

Under each question we have left space for comments if you wish to add any additional information or clarify your responses.

Contact information (please supply as much as possible)
Name:
Position:
Institution/Organisation:
Country:
Email address:

1) Year of publication

What year were your current guidelines published?	

Content

2) Which professions, settings, and client groups do they include?	
Please tick all that apply	
Healthcare service managers	
Smoking cessation specialists	
Primary care	
Doctors	
Nurses	
Pharmacists	
Dentists	
Hospitals	
Addiction services	
Mental health services	
Prisons	
Pregnant tobacco users	
Smokeless tobacco users	
Other (please specify):	

3) Do the guidelines recommend		
	Yes	No

Brief advice?		
Quitlines?		
Text messaging?		
Intensive specialist support?		
Medications?		
Recording tobacco use in patient medical notes?		

4) Medications: do the guidelines recommend		
	Yes	No
NRT gum		
NRT patch		
Other NRT		
Bupropion		
Varenicline		
Cytisine		
Other (please specify):		

5) Do the guidelines		
	Yes	No
Stress the importance of healthcare workers setting an example by not using tobacco?		

Recommend cessation programmes specifically for healthcare workers?		
Include evidence on cost effectiveness?		
Reference or refer to the Cochrane Library?		
Reference or refer to the guidelines of other countries?		
If yes, which countries:		

The writing and dissemination process

6) Writing		
	Yes	No
Do the guidelines clearly describe the writing and review process?		
Do they include conflict-of-interest statements for all authors?		
Did national professional associations participate in drafting or reviewing them?		
Were they peer reviewed?		
Are they formally endorsed or supported by your national government?		
Are they formally endorsed by national professional associations?		
If so, approximately how many:		
Are the guidelines based on another country's guidelines or other guidelines?		
If yes, which countries:		
Is there a strategy to disseminate the guidelines?		
If yes, can you describe the strategy:		

7) Where are the guidelines published?		
Please tick all that apply, and give us a PDF and a link, if possible.		
	Yes	No
In a peer reviewed scientific journal		
As a report/book		
Online		
Other (please specify):		

8) Funding		
	Yes	No
Do they clearly state who funded the guidelines?		
Did they receive financial support from government or other public health organisations?		
Did they receive financial support from the pharmaceutical industry?		
Do the names and/or logos of any pharmaceutical appear in the guidelines?		

9) Please add here any further comments you would like to make, including any relevant references or links

Survey complete, thank you very much indeed

Tobacco Treatment Guidelines Questionnaire in Spanish



Cuestionario sobre las guías de cesación tabáquica 2016

Le estamos enviando este cuestionario porque creemos que su país tiene guías de tratamiento. Si no fuera así, le agradeceríamos que nos lo informe.

Estimamos que completar el siguiente cuestionario le llevará entre 10 y 15 minutos. Muchas gracias.

Kapka Nilan (msxkn4@nottingham.ac.uk) y Martin Raw (martin@martinraw.com) en nombre del equipo de investigación de las Universidades de Nottingham y de Londres

Debajo de cada pregunta dejamos espacio para comentarios por si Ud quiere agregar información adicional o aclarar sus respuestas.

Datos personales (proporcionar la mayor cantidad de información posible)
Nombre:
Posición:
Institución/Organización:
País:
Dirección de correo electrónico:

1) Año de Publicación

¿En qué año fueron publicadas las guías actuales?	

Contenido

2) ¿Qué profesiones, situaciones o grupos de pacientes incluyen?	
	Marcar todas las que correspondan
Administradores de servicios sanitarios	
Especialistas en tabaquismo	
Atención primaria	
Médicos	
Enfermeros	
Farmaceúticos	
Odontólogos	
Hospitales	
Servicios contra las Adicciones	
Servicio de Salud Mental	
Carceles	
Fumadoras embarazadas	
Consumidores de tabaco sin humo	
Otros (por favor especificar):	

3) Las guías recomiendan		
	Si	No
Consejo breve?		
Líneas telefónicas para dejar de fumar?		
Mensajes de texto?		
Ayuda intensiva de especialista?		
Medicamentos?		
Registro del fumador en las historias clínicas?		

4) Sobre la medicación, recomiendan las guías		
	Si	No
Chicles de Terapia de Reemplazo de Nicotina?		
Parches de Terapia de Reemplazo de Nicotina?		
Otras formas de Terapia de Reemplazo de Nicotina?		
Bupropion?		
Vareniclina?		
Citisina?		
Otros (por favor, especificar):		

5) En referencia a las guías,		
	Si	No
¿Se remarca la importancia a los profesionales de la salud como ejemplo que no fumar?		
¿Se recomienda programas para dejar de fumar específicos para trabajadores de la salud?		
¿Se incluyen datos empíricos de costo efectividad?		
¿Se cita o da como referencia la biblioteca Cochrane?		
¿Se cita o da como referencia guías de otros países?		
Si la respuesta es afirmativa, indique que países:		

Proceso de redacción y difusión

6) En referencia a la redacción de las guías		
	Si	No
¿Describen con claridad el proceso de redacción y revisión?		
¿Incluyen la declaración de conflicto de intereses de todos los autores?		
¿Las asociaciones nacionales de profesionales participaron en la elaboración o revisión de las mismas?		
¿Fueron evaluadas por expertos?		
¿Están formalmente aprobadas o respaldadas por su gobierno nacional?		
¿Están formalmente aprobadas por las asociaciones nacionales de profesionales?		

Si es así, aproximadamente ¿por cuantas?:		
¿Están basadas en otras guías o en guías de otros países?		
Si la respuesta es afirmativa, ¿en cuáles?:		
¿Existe una estrategia para la difusión de las guías?		
Si la respuesta es afirmativa, describir la estrategia:		

7) ¿Dónde están publicadas las guías?		
Marcar todas las que correspondan, enviar un PDF y un enlace de ser posible.		
	Si	No
En una revista científica		
En un informe/libro		
Internet		
Otros (por favor especificar):		

8) En referencia a la financiación		
	Si	No
¿Se establecen claramente quién financió las guías?		
¿Recibieron ayuda financiera del gobierno u otros organismos de salud pública?		
¿Recibieron ayuda financiera de la industria farmacéutica?		
¿Aparecen en las guías los nombres y/o logos de alguna industria farmacéutica?		

9) Añada aquí todo otro comentario que le gustaría realizar, incluyendo referencias o enlaces relevantes

Fin de la encuesta. Muchas gracias.

Tobacco Treatment Guidelines Questionnaire in French



Enquête 2016: Recommandations de bonne pratique pour l'aide à l'arrêt du tabac

Nous vous envoyons ce questionnaire parce que nous croyons que votre pays a des recommandations de bonne pratique pour l'aide à l'arrêt du tabac. Si cette affirmation est inexacte, nous vous serions reconnaissants de nous le dire.

Remplir ce questionnaire devrait vous prendre 10 à 15 minutes. Merci beaucoup.

Kapka Nilan (msxkn4@nottingham.ac.uk) et Martin Raw (martin@martinraw.com) de la part de l'équipe responsable de l'enquête aux universités de Nottingham et de Londres

Sous chaque question, nous avons laissé un espace pour les commentaires si vous souhaitez ajouter des informations supplémentaires ou clarifier vos réponses.

Vos coordonnées (merci de fournir le plus de précisions possibles)
Nom:
Position:
Institution/Organisation:
Pays:
Courriel:

1) Année de publication	
En quelle année ont été publiées les recommandations les plus récentes ?	

Contenu

2) A quelles professions, lieux de soins, et groupes de patients ces recommanadations s'adressent-elles ?	
	Merci de cocher toutes les options correspondantes
Directeurs de services de soins	
Tabacologues	
Médecins généralistes	
Autres médecins (ex: hospitaliers)	
Infirmières/Infirmiers	
Pharmaciens	
Dentistes	
Hôpitaux	
Services d'Addictologie	
Hôpitaux psychiatriques	
Prisons	
Femmes enceintes	
Utilisateurs de tabac non fumé	
Autres (précisez) :	

3) Ces recommandations préconisent-elles

	Oui	Non
Le conseil bref ?		
Les lignes téléphoniques d'arrêt ?		
Des message texte (sms, textos) ?		
L'aide intensive d'un spécialiste ?		
Les médications ?		
L'enregistrement du tabagisme des patients dans le dossier médical ?		

4) Ces recommandations préconisent-elles des médications ?		
	Oui	Non
TNS gomme (TNS = traitement nicotinique de substitution)		
TNS patch		
autre TNS		
Bupropion		
Varénicline		
Cytisine		
Autres (précisez) :		

5) Les recommandations…		
	Oui	Non

insistent-elles sur l'importance pour les soignants de ne pas fumer, afin de montrer l'exemple ?		
préconisent-elles spécifiquement des programmes pour l'aide à l'arrêt du tabac des personnels de santé ?		
incluent-elles des preuves de coût-efficacité ?		
font-elles référence aux revues de la Cochrane Library ?		
font-elles référence à des recommandations d'autres pays ?		
Si oui, quel(s) pays :		

Le processus d'écriture et de diffusion

6) La procédure utilisée pour ces recommandations		
	Oui	Non
Décrit-elle précisément la procédure d'écriture et de relecture ?		
Présente-elle des déclarations de conflits d'intérêts de tous les auteurs ?		
Des associations professionnelles nationales ont-elles participé à l'écriture ou à la relecture ?		
Ces recommandations ont-elles été relues par un comité de lecture ?		
Sont-elles formellement approuvées ou supportées par votre gouvernement ?		
Sont-elles formellement approuvées par des associations professionnelles nationales ?		
Si oui, combien approximativement :		
Ces recommandations sont-elles basées sur les recommandations d'un autre pays ou sur d'autres recommandations ?		

Si oui, quel(s) pays :		
Existe-t-il une stratégie de diffusion de ces recommandations ?		
Si oui, pourriez-vous nous décrire la stratégie :		
7) Où sont publiées ces recommandations ?		
Merci de cocher toutes les options correspondantes, et donnez-nous un PDF et un lien, si possible.		
	Oui	Non
Dans un journal scientifique à comité de lecture		
Sous forme d'un livre/rapport		
Sur internet		
Ailleurs (merci de préciser) :		

8) Financement		
	Oui	Non
Ces recommandations décrivent-elles précisément qui a financé ces recommandations ?		
Ont-elles reçu un soutien financier du gouvernement ou d'autres organisations de santé publique ?		
Ont-elles reçu un soutien financier de l'industrie pharmaceutique ?		
Les noms et/ou les logos de compagnies pharmaceutiques apparaissent-ils dans ces recommandations ?		

9) Merci d'indiquer ici les commentaires ou remarques que vous souhaitez faire, incluant toute(s) référence(s) que vous jugeriez utile(s)

L'enquête est terminée, merci beaucoup de votre collaboration.

Tobacco Treatment Guidelines Survey Invitation email

English

Dear

We are sending you this questionnaire because in our treatment survey you indicated that your country has tobacco treatment guidelines, or because from other sources we believe your country has tobacco treatment guidelines.

We would be most grateful if you could do the survey for us; it takes approximately 15 minutes.

Please save the attached questionnaire on your computer and then return by email, and if possible include a PDF of your guidelines.

Alternatively a web based version of the survey in English can be accessed from the following link:

https://nottingham.onlinesurveys.ac.uk/guidelines_survey2016

Please note that only one questionnaire per country should be submitted.

Please do not hesitate to contact us if you have any questions.

Thank you very much.

Martin Raw (martin@martinraw.com) and Kapka Nilan (msxkn4@nottingham.ac.uk)

On behalf of the research team at Nottingham University and King's College London, UK

Espanol

Estimado / Estimada,

Le estamos enviando este cuestionario porque en nuestra encuesta de tratamiento Ud. indicó que su país cuenta con guías de tratamiento del tabaco, o porque a partir de otras fuentes creemos que su país cuenta con guías de tratamiento del tabaco.

Estaríamos muy agradecidos si usted pudiera completar esta encuesta, se tarda aproximadamente 15 minutos.

Por favor, guarde el cuestionario que se adjunta en su ordenador y luego enviarlo por correo electrónico, y si es posible incluir una copia de las guías en un archivo PDF.

Alternativamente, se puede acceder en la web a una versión en inglés de la encuesta en el siguiente enlace:

https://nottingham.onlinesurveys.ac.uk/guidelines_survey2016

Tenga en cuenta que se debe presentar sólo un cuestionario por país.

Por favor, no dude en ponerse en contacto con nosotros si tiene alguna pregunta.

Muchas gracias.

Martin Raw (martin@martinraw.com) e Kapka Nilan (msxkn4@nottingham.ac.uk)

En nombre del equipo de investigación de la Universidad de Nottingham y el King's College de Londres , del Reino Unido.

Francais

Cher /Chère,

Nous vous envoyons ce questionnaire car, dans notre enquête sur les traitements d'aide à l'arrêt du tabac, vous avez indiqué que votre pays avait des recommandations de bonne pratique, ou que par d'autres sources nous pensons que c'est le cas.

Nous vous serions très reconnaissant si vous pouviez répondre à ce questionnaire, il vous prendra environ 15 minutes.

Merci de sauvegarder le questionnaire ci-joint sur votre ordinateur, puis de nous le transmettre par courriel, et si possible fournissez-nous un PDF des recommandations de votre pays.

Sinon, une version en ligne de ce questionnaire en anglais est accessible à partir du lien suivant :

https://nottingham.onlinesurveys.ac.uk/guidelines_survey2016

Veuillez s'il vous plaît noter, qu'un seul questionnaire par pays doit être soumis.

N'hésitez pas à nous contacter si vous avez des questions.

Merci beaucoup pour votre collaboration.

Dr Martin Raw et Kapka Nilan

de la part de l'équipe responsable de l'enquête aux universités de Nottingham et de King's College London, Royaume-Uni

APPENDIX III Survey Respondent Countries

Respondent countries in Tobacco Treatment Survey

Countries	WHO region	FCTC Signed	FCTC Ratified	FCTC entered into force
Algeria	Africa	20/06/2003	30/06/2006	28/09/2006
Benin	Africa	18/06/2004	03/11/2005	01/02/2006
Botswana	Africa	16/06/2003	31/01/2005	01/05/2005
Burkina Faso	Africa	22/12/2003	31/07/2006	29/10/2006
Burundi	Africa	16/06/2003	22/11/2005	20/02/2006
Cameroon	Africa	13/05/2004	03/02/2006	04/05/2006
Chad	Africa	22/06/2004	30/01/2006	30/04/2006
Congo	Africa	23/03/2004	06/02/2007	07/05/2007
Cote d'Ivoire	Africa	24/07/2003	13/08/2010	11/11/2010
Democratic Republic of the Congo	Africa	28/06/2004	28/10/2005	26/01/2006
Ethiopia	Africa	25/02/2004	25/03/2014	23/06/2014
Ghana	Africa	20/06/2003	29/11/2004	27/02/2005
Guinea	Africa	01/04/2004	07/11/2007	05/02/2008
Kenya	Africa	25/06/2004	25/06/2004	27/02/2005
Madagascar	Africa	24/09/2003	22/09/2004	27/02/2005
Mali	Africa	23/09/2003	19/10/2005	17/01/2006
Mauritania	Africa	24/06/2004	28/10/2005	26/01/2006
Namibia	Africa	29/01/2004	07/11/2005	05/02/2006
Nigeria	Africa	28/06/2004	20/10/2005	18/01/2006
Senegal	Africa	19/06/2003	27/01/2005	27/04/2005
Seychelles	Africa	11/09/2003	12/11/2003	27/02/2005
Sierra Leone	Africa		22/05/2009	20/08/2009
South Africa	Africa	16/06/2003	19/04/2005	18/07/2005
Togo	Africa	12/05/2004	15/11/2005	13/02/2006
Uganda	Africa	05/03/2004	20/06/2007	18/09/2007
United Republic of Tanzania	Africa	27/01/2004	30/04/2007	29/07/2007
Zambia	Africa		23/05/2008 a	21/08/2008
Antigua and Barbuda	Americas	28/06/2004	05/06/2006	03/09/2006
Bahamas	Americas	29/06/2004	03/11/2009	01/02/2010
Barbados	Americas	28/06/2004	03/11/2005	01/02/2006
Belize	Americas	26/09/2003	15/12/2005	15/03/2006

Bolivia (Plurinational State of)	Americas	27/02/2004	15/09/2005	14/12/2005
Brazil	Americas	16/06/2003	03/11/2005	01/02/2006
Canada	Americas	15/07/2003	26/11/2004	27/02/2005
Chile	Americas	25/09/2003	13/06/2005	11/09/2005
Colombia	Americas		10/04/2008 a	09/07/2008
Costa Rica	Americas	03/07/2003	21/08/2008	19/11/2008
Dominica	Americas	29/06/2004	24/07/2006	22/10/2006
Ecuador	Americas	22/03/2004	25/07/2006	23/10/2006
El Salvador	Americas	18/03/2004	21/07/2014	19/10/2014
Grenada	Americas	29/06/2004	14/08/2007	12/11/2007
Guatemala	Americas	25/09/2003	16/11/2005	14/02/2006
Guyana	Americas		15/09/2005 a	14/12/2005
Honduras	Americas	18/06/2004	16/02/2005	17/05/2005
Jamaica	Americas	24/09/2003	07/07/2005	05/10/2005
Mexico	Americas	12/08/2003	28/05/2004	27/02/2005
Nicaragua	Americas	07/06/2004	09/04/2008	08/07/2008
Panama	Americas	26/09/2003	16/08/2004	27/02/2005
Paraguay	Americas	16/06/2003	26/09/2006	25/12/2006
Peru	Americas	21/04/2004	30/11/2004	28/02/2005
Saint Kitts and Nevis	Americas	29/06/2004	21/06/2011	19/09/2011
Saint Lucia	Americas	29/06/2004	07/11/2005	05/02/2006
Saint Vincent and the Grenadines	Americas	14/06/2004	29/10/2010	27/01/2011
Trinidad and Tobago	Americas	27/08/2003	19/08/2004	27/02/2005
Uruguay	Americas	19/06/2003	09/09/2004	27/02/2005
Venezuela (the Bolivarian Republic of)	Americas	22/09/2003	27/06/2006	25/09/2006
Bahrain	Eastern Mediterranean		20/03/2007 a	18/06/2007
Djibouti	Eastern Mediterranean	13/05/2004	31/07/2005	29/10/2005

Egypt	Eastern Mediterranean	17/06/2003	25/02/2005	26/05/2005
Iran (Islamic Republic of)	Eastern Mediterranean	16/06/2003	06/11/2005	04/02/2006
Jordan	Eastern Mediterranean	28/05/2004	19/08/2004	27/02/2005
Lebanon	Eastern Mediterranean	04/03/2004	07/12/2005	07/03/2006
Oman	Eastern Mediterranean		9/03/2005 a	07/06/2005
Pakistan	Eastern Mediterranean	18/05/2004	03/11/2004	27/02/2005
Qatar	Eastern Mediterranean	17/06/2003	23/07/2004	27/02/2005
Sudan	Eastern Mediterranean	10/06/2004	31/10/2005	29/01/2006
Tunisia	Eastern Mediterranean	22/08/2003	07/06/2010	05/09/2010
United Arab Emirates	Eastern Mediterranean	24/06/2004	07/11/2005	05/02/2006
Yemen	Eastern Mediterranean	20/06/2003	22/02/2007	23/05/2007
Albania	Europe	29/06/2004	26/04/2006	25/07/2006
Armenia	Europe		29/11/2004 a	27/02/2005
Austria	Europe	28/08/2003	15/09/2005	14/12/2005
Belgium	Europe	22/01/2004	01/11/2005	30/01/2006
Bosnia and Herzegovina	Europe	10/07/2009	08/10/2009	
Croatia	Europe	02/06/2004	14/07/2008	12/10/2008
Cyprus	Europe	24/05/2004	26/10/2005	24/01/2006
Czech Republic	Europe	16/06/2003	01/06/2012	30/08/2012
Denmark	Europe	16/06/2003	16/12/2004	16/03/2005
			16/12/2004	16/03/2005
Estonia	Europe	08/06/2004	27/07/2005	25/10/2005
Finland	Europe	16/06/2003	24/01/2005	24/04/2005
France	Europe	16/06/2003	19/10/2004 AA	27/02/2005
Georgia	Europe	20/02/2004	14/02/2006	15/05/2006
Germany	Europe	24/10/2003	16/12/2004	16/03/2005
Greece	Europe	16/06/2003	27/01/2006	27/04/2006
Hungary	Europe	16/06/2003	07/04/2004	27/02/2005
Ireland	Europe	16/09/2003	07/11/2005	05/02/2006
Israel	Europe	20/06/2003	24/08/2005	22/11/2005
Italy	Europe	16/06/2003	02/07/2008	30/09/2008

Kazakhstan	Europe	21/06/2004	22/01/2007	22/04/2007
Kyrgyzstan	Europe	18/02/2004	25/05/2006	23/08/2006
Latvia	Europe	10/05/2004	10/02/2005	11/05/2005
Lithuania	Europe	22/09/2003	16/12/2004	16/03/2005
Luxembourg	Europe	16/06/2003	30/06/2005	28/09/2005
Malta	Europe	16/06/2003	24/09/2003	27/02/2005
Montenegro	Europe		23/10/2006 d	21/01/2007
Netherlands	Europe	16/06/2003	27/01/2005 A	27/04/2005
			16/12/2004	16/03/2005
Norway	Europe	16/06/2003	16/06/2003 AA	27/02/2005
Poland	Europe	14/06/2004	15/09/2006	14/12/2006
Portugal	Europe	09/01/2004	08/11/2005 AA	06/02/2006
Romania	Europe	25/06/2004	27/01/2006	27/04/2006
San Marino	Europe	26/09/2003	07/07/2004	27/02/2005
			16/12/2004	16/03/2005
Serbia	Europe	28/06/2004	08/02/2006	09/05/2006
Slovakia	Europe	19/12/2003	04/05/2004	27/02/2005
Slovenia	Europe	25/09/2003	15/03/2005	13/06/2005
Spain	Europe	16/06/2003	11/01/2005	11/04/2005
Sweden	Europe	16/06/2003	07/07/2005	05/10/2005
Tajikistan	Europe		21/06/2013	19/09/2013
Turkey	Europe	28/04/2004	31/12/2004	31/03/2005
Turkmenistan	Europe		13/05/2011	11/08/2011
Ukraine	Europe	25/06/2004	06/06/2006	04/09/2006
United Kingdom (England, Scotland, Northern Ireland, Wales)	Europe	16/06/2003	16/12/2004	16/03/2005
Uzbekistan	Europe		15/05/2012	13/08/2012
Bangladesh	South East Asia	16/06/2003	14/06/2004	27/02/2005
India	South East Asia	10/09/2003	05/02/2004	27/02/2005
Sri Lanka	South East Asia	23/09/2003	11/11/2003	27/02/2005
Thailand	South East Asia	20/06/2003	08/11/2004	27/02/2005

Australia	Western Pacific	05/12/2003	27/10/2004	27/02/2005
Brunei Darussalam	Western Pacific	03/06/2004	03/06/2004	27/02/2005
Cambodia	Western Pacific	25/05/2004	15/11/2005	13/02/2006
China[1]	Western Pacific	10/11/2003	11/10/2005	09/01/2006
Cook Islands	Western Pacific	14/05/2004	14/05/2004	27/02/2005
Fiji	Western Pacific	03/10/2003	03/10/2003	27/02/2005
Japan	Western Pacific	09/03/2004	08/06/2004 A	27/02/2005
Kiribati	Western Pacific	27/04/2004	15/09/2005	14/12/2005
Lao People's Democratic Republic	Western Pacific	29/06/2004	06/09/2006	05/12/2006
Malaysia	Western Pacific	23/09/2003	16/09/2005	15/12/2005
Marshall Islands	Western Pacific	16/06/2003	08/12/2004	08/03/2005
Mongolia	Western Pacific	16/06/2003	27/01/2004	27/02/2005
New Zealand	Western Pacific	16/06/2003	27/01/2004	27/02/2005
Niue	Western Pacific	18/06/2004	03/06/2005	01/09/2005
Palau	Western Pacific	16/06/2003	12/02/2004	27/02/2005
Papua New Guinea	Western Pacific	22/06/2004	25/05/2006	23/08/2006
Philippines	Western Pacific	23/09/2003	06/06/2005	04/09/2005
Republic of Korea	Western Pacific	21/07/2003	16/05/2005	14/08/2005
Singapore	Western Pacific	29/12/2003	14/05/2004	27/02/2005
Tonga	Western Pacific	25/09/2003	08/04/2005	07/07/2005
Tuvalu	Western Pacific	10/06/2004	26/09/2005	25/12/2005
Vanuatu	Western Pacific	22/04/2004	16/09/2005	15/12/2005
Viet Nam	Western Pacific	03/09/2003	17/12/2004	17/03/2005

Respondent countries in Tobacco Treatment Guidelines Survey

Country	FCTC Status	Date of FCTC signing/ratifying
Argentina	Signatory	25-Sep-2003
Armenia	Party	29-Nov-2004
Australia	Party	27-Oct-2004
Austria	Party	15-Sep-2005
Bahrain	Party	20-Mar-2007
Belgium	Party	01-Nov-2005
Bosnia and Herzegovina	Party	10-Jul -2009
Brazil	Party	03-Nov-2005
Brunei Darussalam	Party	03-Jun-2004
Canada	Party	26-Nov-2004
Chile	Party	13-Jun-2005
China	Party	11-Oct-2005
Czech Republic	Party	01-Jun-2012
Denmark	Party	16-Dec-2004
El Salvador	Party	21-Jul-2014
England	Party	16-Dec-2004
Estonia	Party	27-Jul-2005
Finland	Party	25-Jan-2005
France	Party	19-Oct-2004
Georgia	Party	14-Feb-2006
Germany	Party	16-Dec-2004
Greece	Party	27-Jan-2006
India	Party	05-Feb-2004
Iran	Party	05-Nov-2005
Italy	Party	02-Jul-2008
Japan	Party	08-Jun-2004
Jordan	Party	19-Aug-2004
Kyrgyzstan	Party	25-May-2006
Latvia	Party	01-Feb-2005
Malaysia	Party	16-Sep-2005
Malta	Party	24-Sep-2003
Mexico	Party	28-May-2004
Montenegro	Party	23-Oct-2006
Morocco	Signatory	16-Apr-2004
Netherlands	Party	27-Jan-2005
New Zealand	Party	27-Jan-2004
Northern Ireland	Party	16-Dec-2004
Norway	Party	16-Jun-2003
Pakistan	Party	03-Nov-2004
Panama	Party	16-Aug-2004
Paraguay	Party	26-Sep-2006
Poland	Party	15-Sep-2006
Portugal	Party	08-Nov-2005

Romania	Party	27-Jan-2006
Russia	Party	03-Jun-2008
Scotland	Party	16-Dec-2004
Singapore	Party	14-May-2004
Slovak Republic	Party	04-May-2004
Slovenia	Party	15-Mar-2005
Spain	Party	11-Jan-2005
Sweden	Party	07-Jul-2005
Switzerland	Signatory	25-Jun-2004
Thailand	Party	08-Nov-2004
Turkey	Party	31-Dec-2004
Ukraine	Party	06-Jun-2006
United Arab Emirates	Party	07-Nov-2005
United States of America	Signatory	10-May-2004
Uruguay	Party	09-Sep-2004
Venezuela	Party	27-Jun-2006
Vietnam	Party	17-Dec-2004
Wales	Party	16-Dec-2004

Parties = countries that signed and fully or partially ratified the FCTC
Signatories = countries that have signed but not ratified the FCTC
Non-Parties =countries that are neither signatories or Parties to the FCTC

Source: United Nations Treaty Collection
https://treaties.un.org/pages/ViewDetails.aspx?src=TREATY&mtdsg_no=IX-4&chapter=9&clang=_en

APPENDIX IV Systematic Review Search Strategy and Data Extraction Form

Example of search terms

Medline database search terms

1. exp Students, Health Occupations/
2. exp Health Personnel/
3. exp Community Health Workers/
4. exp Mental Health Services/
5. exp Emergency service,
6. hospital/
7. exp Emergency Medical Services/
8. physician*
9. "general practitioner*"
10. "family doctor"
11. "medical doctor"
12. "clinical officer"
13. "mental health personnel"
14. nurse*
15. pharmacist*
16. dentist*
17. exp Pharmacists
18. exp Dentists/
19. any of 1 – 18
20. exp "Tobacco Use"/
21. exp Smoking/
22. exp Tobacco
23. Smokeless/
24. smoking.mp.
25. "smoking behaviour".mp.
26. "smoking status".mp.
27. "smoking prevalence".mp.
28. "tobacco use".mp.
29. shisha.mp.
30. waterpipe.mp.
31. "water pipe".mp.
32. cigar*.mp.
33. "smokeless tobacco".mp.

34. any of 20 – 33
35. 19 and 34
36. Limit 35 to (humans and last 16 years)

Data Extraction and Quality Assessment Form

Double checked ☐ **Excluded** ☐ **Entered into database** ☐

Reviewer			
Lead Author		**Year of publication**	
Title			
Journal			
Description (is it part of a larger study e.g. Nurses' Health study)			
Full paper ☐		**Abstract** ☐	
English ☐		**Other language** ☐	
Country		**Year/s data collected**	
WHO Region	**Africa** ☐ **Americas** ☐ **Europe** ☐ **Eastern Mediterranean** ☐ **South East Asia** ☐ **Western Pacific** ☐		
Type of study	**Cross-sectional** ☐ **Cohort** ☐ **Case - control** ☐ **Report** ☐ **Other** ☐		
Study population	**Workers** ☐ **Students** ☐ **Both**		
Survey method	**Postal questionnaire** ☐ **On-line** ☐ **Interview** ☐ **Other** ☐		
Category of healthcare workers and students in the sample	**Medical** ☐ **Nursing** ☐ **Dental** ☐ **Pharmacy** ☐ **Mental health** ☐ **Other** ☐		

Sample size (N)	
Survey response rate (%)	

Tobacco use (e.g. cigarettes, RYO, water-pipe) :

Prevalence of (please specify :……)

% (n)	Current user	Former	Ever	Never	Other
Overall					
Male					
Female					

Prevalence of (please specify :……)

% (n)	Current	Former	Ever	Never	Other
Overall					
Male					
Female					

Prevalence of (please specify :……)

% (n)	Current	Former	Ever	Never	Other
Overall					
Male					
Female					

Study Quality	**Study population**	**Yes/No**	**Sampling and data collection**	**Yes/No**
	Is the study population clearly defined?		Study participants randomly selected?	
	Is the size of the sample representative of the study population?		Self-administered anonymous survey method used?	
	Is the response rate >70% of total?		Tobacco use verified by biochemical measure?	
	Is the study period well defined?		Research funding and conflict of interest clearly stated?	
	Is the type of tobacco use clearly defined and measured?		**Total score**	

Reviewer's Comments:

Contact authors for further details? **Yes** ☐

APPENDIX V

Prevalence of tobacco use comparison: male HCWs compared with males in the general population by country

Country	Country Income Level	Year Data Mean	HCW Males pooled %	Year	Males, %	Difference, %	Prevalence Comparison
Bahrain	High	2005	26.3	2015	48.8	-22.5	lower in HCW
Israel	High	2006	18.9	2015	41.2	-22.3	lower in HCW
Ireland	High	2003	0.5	2015	22.4	-21.9	lower in HCW
Lithuania	High	2005	17.3	2015	38.1	-20.8	lower in HCW
Poland	High	2008	13	2015	32.4	-19.4	lower in HCW
USA	High	2005	2.8	2015	19.5	-16.7	lower in HCW
Belgium	High	2011	10	2015	26.5	-16.5	lower in HCW
Estonia	High	2002	24.9	2015	41.2	-16.3	lower in HCW
Japan	High	2005	19	2015	33.7	-14.7	lower in HCW
Chile	High	2002	29.2	2015	40	-10.8	lower in HCW
Oman	High	2001	16.4	2015	21	-4.6	lower in HCW
Spain	High	2006	27.1	2015	31.3	-4.2	lower in HCW
Croatia	High	2008	36.5	2015	39.4	-2.9	lower in HCW
Malta	High	2011	27.1	2015	29.7	-2.6	lower in HCW
Sweden	High	2004	18	2015	20.4	-2.4	lower in HCW
France	High	2006	27.8	2015	29.8	-2	lower in HCW

Portugal	High	2009	29.6	2015	31.5	-1.9	lower in HCW
Greece	High	2004	50.8	2015	52.6	-1.8	lower in HCW
Australia	High	2011	18.3	2015	16.7	1.6	higher in HCW
Italy	High	2006	30.6	2015	28.3	2.3	higher in HCW
Uruguay	High	2006	46.3	2015	26.7	19.6	higher in HCW
Czech Republic	High	2014		2015	37.4		no data
Denmark	High	2006		2015	17.6		no data
Finland	High	2004		2015	23.2		no data
Germany	High	2006		2015	32.4		no data
Korea	High	2011		2015			no data
Qatar	High	2007	12.9	2015			no data
Saudi Arabia	High	2008		2015	27.9		no data
UK	High	2008		2015	19.9		no data
Russia	UM	2002	33	2015	59	-26	lower in HCW
Bosnia&Herzegovina	UM	2002	33.3	2015	47.2	-13.9	lower in HCW
China	UM	2008	37.6	2015	47.6	-10	lower in HCW
Lebanon	UM	2001	36.2	2015	45.4	-9.2	lower in HCW
Argentina	UM	2006	29.4	2015	29.5	-0.1	lower in HCW
Mexico	UM	2008	23.7	2015	20.8	2.9	higher in HCW
Turkey	UM	2008	42.5	2015	39.5	3	higher in HCW
Brazil	UM	2008	28	2015	19.3	8.7	higher in HCW
Iran	UM	2007	37.4	2015	21.5	15.9	higher in HCW
Ecuador	UM	2002	35.2	2015	14	21.2	higher in HCW
Colombia	UM	2011		2015	16		no data

Cuba	UM	2007		2015	52.7		no data
Dominican Republic	UM	2011		2015	18.8		no data
Jamaica	UM	2004		2015	29.9		no data
Jordan	UM	2006		2015	70.2		no data
Malaysia	UM	2009		2015	43		no data
Peru	UM	2009	67.2	2015			no data
Romania	UM	2009		2015	36.9		no data
Serbia	UM	2006		2015	43.6		no data
South Africa	UM	2007		2015	31.4		no data
Venezuela	UM	2007	38.7	2015			no data
Indonesia	LM	2003	22	2015	76.2	-54.2	lower in HCW
Armenia	LM	2007	36.5	2015	52.3	-15.8	lower in HCW
India	LM	2011	7.3	2015	20.4	-13.1	lower in HCW
Pakistan	LM	2009	56.2	2015	41.9	14.3	higher in HCW
Cameroon	LM	2010		2015	43.8		no data
Lao	LM	2007		2015	56.6		no data
Nigeria	LM	2002		2015	17.4		no data
Philippines	LM	2014		2015	43		no data
Syria	LM	2011	35	2015			no data
Tunisia	LM	2008	53	2015			no data
Vietnam	LM	2012		2015	47.1		no data
Nepal	Low	2009	24	2015	37.1	-13.1	lower in HCW
Senegal	Low	2005		2015	23.4		no data

Prevalence of tobacco use comparison: female HCWs compared with females in the general population by country

Country	WB Income Level	Year Data Mean	HCW Females,%	Year	Females, %	Difference , %	Prevalence Comparison
Uruguay	High	2006	38.7	2015	19.4	19.3	higher in HCW
Greece	High	2004	46.1	2015	32.7	13.4	higher in HCW
Spain	High	2006	36.4	2015	27.1	9.3	higher in HCW
Denmark	High	2006	23.4	2015	16.4	7	higher in HCW
Malta	High	2011	24.8	2015	20.2	4.6	higher in HCW
Italy	High	2006	23.7	2015	19.7	4	higher in HCW
Australia	High	2011	16.3	2015	13.1	3.2	higher in HCW
Croatia	High	2008	35.7	2015	33.5	2.2	higher in HCW
Portugal	High	2009	15.3	2015	13.7	1.6	higher in HCW
Czech Republic	High	2014	29.5	2015	29	0.5	higher in HCW
France	High	2006	25.4	2015	25.6	-0.2	lower in HCW
Oman	High	2001	0.3	2015	1	-0.7	lower in HCW
Lithuania	High	2005	19.1	2015	22.2	-3.1	lower in HCW
USA	High	2005	11.9	2015	15	-3.1	lower in HCW
Japan	High	2005	7.4	2015	10.6	-3.2	lower in HCW
Israel	High	2006	13.5	2015	19.3	-5.8	lower in HCW
Chile	High	2002	29.9	2015	36	-6.1	lower in HCW
Ireland	High	2003	10	2015	21.9	-11.9	lower in HCW
Sweden	High	2004	7.3	2015	20.8	-13.5	lower in HCW

Estonia	High	2002	10.8	2015	24.9	-14.1	lower in HCW
Poland	High	2008	9	2015	23.7	-14.7	lower in HCW
Belgium	High	2011	5	2015	20	-15	lower in HCW
Germany	High	2006		2015	28.3		no data
Korea	High	2011	1.2	2015			no data
Qatar	High	2007	1.5	2015			no data
Bahrain	High	2005		2015	7.6		no data
Finland	High	2004		2015	18.5		no data
Saudi Arabia	High	2008		2015	2.9		no data
UK	High	2008		2015	18.4		no data
Ecuador	UM	2002	24.1	2015	3.3	20.8	higher in HCW
Cuba	UM	2007	38.4	2015	17.8	20.6	higher in HCW
Jordan	UM	2006	30	2015	10.7	19.3	higher in HCW
Bosnia&Herzegovina	UM	2002	48	2015	30	18	higher in HCW
Turkey	UM	2008	26.7	2015	12.4	14.3	higher in HCW
Argentina	UM	2006	31	2015	18.4	12.6	higher in HCW
Brazil	UM	2008	19.9	2015	11.3	8.6	higher in HCW
Mexico	UM	2008	12.6	2015	6.6	6	higher in HCW
South Africa	UM	2007	8	2015	6.5	1.5	higher in HCW
Iran	UM	2007	1.2	2015	0.7	0.5	higher in HCW
Russia	UM	2002	21.1	2015	22.8	-1.7	lower in HCW
Jamaica	UM	2004	4	2015	5.9	-1.9	lower in HCW
Lebanon	UM	2001	17.3	2015	31	-13.7	lower in HCW
China	UM	2008		2015	1.8		no data

Colombia	UM	2011		2015	6.2		no data
Dominican Republic	UM	2011		2015	9.4		no data
Malaysia	UM	2009		2015	1.4		no data
Peru	UM	2009		2015	5.9		no data
Serbia	UM	2006		2015	39.7		no data
Romania	UM	2009		2015	22.7		no data
Armenia	LM	2007	14.5	2015	1.5	13	higher in HCW
Pakistan	LM	2009	10	2015	3	7	higher in HCW
India	LM	2011	0.5	2015	1.9	-1.4	lower in HCW
Indonesia	LM	2003	0.5	2015	3.6	-3.1	lower in HCW
Syria	LM	2011	4	2015			no data
Tunisia	LM	2008	10	2015			no data
Cameroon	LM	2010		2015	0.9		no data
Lao	LM	2007		2015	9.1		no data
Nigeria	LM	2002		2015	1.1		no data
Philippines	LM	2014		2015	8.5		no data
Vietnam	LM	2012		2015	1.3		no data
Nepal	Low	2009	1.8	2015	11.1	-9.3	lower in HCW
Senegal	Low	2005		2015	0.7		no data