

Chapter 9

Smoking Among Health Professionals

**Giuseppe La Torre, Maria Rosaria Gualano, Rosella Saulle,
and Claudio Bontempi**

Objectives The aim of this chapter is to offer advanced data and information carried out and supported by relevant and robust scientific reports and studies on:

- (a) prevalence of smokers among hospital professionals;
- (b) knowledge, attitudes and behaviours towards smoking;
- (c) interventions to prevent and discourage smoking in a health-care sector.

The intention is to give an overview on the prevalence of tobacco smoking among health professionals and medicals students in different countries and to show available examples of smoking prevention and cessation training. In this context, the aims of this section were to investigate and to delineate a review based on the analysis of different smoking cessation interventions aimed to health-care workers and to identify the most effective ones for health professionals and medical students and to describe the current efforts to frame policy prevention strategies smoking cessation interventions—targeted in hospital or during study course—to have a greater positive impact as an example by quitting smoking both for themselves and their patients, so for community and public health.

G. La Torre (✉) • R. Saulle • C. Bontempi
Department of Public Health and Infectious Diseases, “Sapienza” University of Rome,
Piazzale Aldo Moro 5, Rome 00185, Italy
e-mail: giuseppe.latorre@uniroma1.it; rosella.saulle@uniroma1.it;
claudio.bontempi@uniroma1.it

M.R. Gualano
Department of Public Health Sciences, University of Turin,
via Santena 5 bis, Turin 10126, Italy
e-mail: mar.guala@gmail.com

Learning Outcomes

By the end of this chapter the reader will be able to:

- Know epidemiological data about smoking in health-care workers and learn the theory underling the phenomenon “*smoking habits and attitudes toward tobacco among health-care staff and students*”;
- Identify the *important role* among health-care workers staff attitudes towards smoking in determining patient education to quit smoking;
- Evaluate the most effective intervention to prevent and discourage smoking in health-care sector.

9.1 Introduction

Reducing and controlling tobacco smoking should be a primary aim for a certain population in order to reduce harms to health caused by this important risk factor, and there is a general agreement to adopt intervention tools involved in responsibility fields such as health care, education, politics, economy and media.

Tobacco smoking can be considered an old and a new challenge for public health and is both a matter of personal health and a public health concern for health-care providers (Braun et al. 2004; Slater, et al. 2006; Jenkins and Ahijevych 2003; Sarna et al. 2000a).

Health-care professionals have an important role to play both as advisers—*influencing smoking cessation*—and as role models. Studies have shown that patients are often responsive to counsel received from health-care professionals (Hauser, et al. 2002; Sharp and Tishelman 2005).

Health-care worker staff attitudes towards smoking have been shown to be important in determining the effectiveness of workplace smoking policies and nurses who smoke should set an example by quitting smoking both for themselves and their patients.

Health-care professionals and nurses medical doctor who smoke downplay their role in patient education and tend to show a more negative attitude towards patients (Hocking, et al. 1991). Moreover, it has been proposed that before nurses can serve as role models for positive health behaviours, they must incorporate these behaviours into their own personal lifestyles (Soeken, et al. 1989; Morra and Knobf 1983; Faulkner and Ward 1983; Spencer 1984).

Among health professionals the prevalence of tobacco smoke is extremely high, more than other professional categories, and this could be partly attributed to a low weight that tobacco smoking has in the medical curriculum of future physicians that will contribute in a determinant way to healthy choices of their patients. In order to realise that the medical students need to be adequately trained with the aim of acquire competences and skills that help patients to prevent tobacco smoking and to

increase smoking cessation, through a programme oriented to specific issue related to the potential harm of tobacco products.

9.2 Smoking Among Medical Doctors

Medical doctors play a key role in the process of smoking cessation both as advisers and behavioural models for the citizens; so it is relevant to have information on their habits and attitudes towards smoking, especially concerning their role to give help to smokers who wish to quit (Hussain et al. 1993).

In fact, health professionals could better persuade patients to stop smoking if they themselves are not smokers (Smith and Leggat 2007a). Interestingly, other studies have shown that smokers who team up with their health-care providers have more chance to quit than trying on their own.

World Health Organization (WHO 1999; Working Group on Tobacco or Health 1987) has recommended that tobacco-smoking surveys be conducted among health professionals.

In spite of their important and universally accepted role of advisers and exemplars, the investigations conducted among them report that smoking rates among them are quite high. Nevertheless, international trends show physicians' smoking rates are declining in many countries (Smith and Leggat 2007b).

In the United States of America (USA) per capita tobacco consumption has increased from 1880 to 1950, in particular after the First World War (Garfinkel 1997; Giovino 2002). During this period, a lot of physicians used to smoke tobacco and even several medical journals carried out tobacco advertisements (Kawane 1993) (Fig. 9.1).

Conversely, since 1950, smoking habit in the medical profession has decreased worldwide (Smoking control among health-care workers 1993), reflecting the same phenomenon occurred in the general population, and physicians quit to take part in advertising.

In the 1950s and 1960s of last century some studies demonstrated a relationship between tobacco consumption and health risks. In the mid of the 1960s Hammond et al. (1965) showed higher death rates among cigarette smokers in comparison to non-smokers (general population). Moreover, in 1964 the Surgeon General's Advisory Committee on Smoking and Health declared that "Cigarette smoking is a health hazard of sufficient importance in the United States to warrant appropriate remedial action" (U.S. Department of Health, Education and Welfare 1964).

Since 1960, a lot of investigations about smoking habit were conducted among US medical doctors and nowadays it seems that very few physicians are current smokers in USA. In fact in 1959, 40 % of US physicians were smokers (Garfinkel 1976), while in 1975 this percentage appeared to be halved. After 1980, around 21 % of US physicians were current smokers (Garfinkel and Stellman 1986). After 1987 a drastic reduction of smokers' rates among medical doctors was registered: in 1994 prevalence of smokers' physicians was below 10 % (Lee et al. 2004) (Fig. 9.2).

He's one of the busiest men in town. While his door may say *Office Hours 2 to 4*, he's actually on call 24 hours a day.

The doctor is a scientist, a diplomat, and a friendly sympathetic human being all in one, no matter how long and hard his schedule.

According to a recent Nationwide survey:

MORE DOCTORS SMOKE CAMELS THAN ANY OTHER CIGARETTE

DOCTORS in every branch of medicine—113,597 in all—were queried in this nationwide study of cigarette preference. Three leading research organizations made the survey. The gist of the query was—What cigarette do you smoke, Doctor?

The brand named most was Camel!

The rich, full flavor and cool mildness of Camel's superb blend of costlier tobaccos seem to have the same appeal to the smoking tastes of doctors as to millions of other smokers. If you are a Camel smoker, this preference among doctors will hardly surprise you. If you're not—well, try Camels now.

Your "T-Zone" Will Tell You...

T for Taste . . .
T for Throat . . .

that's your proving ground for any cigarette. See if Camels don't suit your "T-Zone" to a "T."

CAMELS *Costlier Tobaccos*

Fig. 9.1 When “more doctors smoked Camels”

In Great Britain a long-lasting longitudinal study called the British Doctor's Study (Doll and Hill 1954, 1964; Doll and Peto 1976; Doll et al. 1980, 1994, 2004) has been conducted since the beginning of the 1950. In 1951 the British Medical Association enrolled 34,440 British doctors to investigate their smoking habits in a prospective cohort. During the first 20 years follow-up, the researchers recorded all the certified causes of deaths and subsequent changes in smoking habits. The ratio of the death rate among cigarette smokers to that among non-smokers of comparable age was, for men under 70 years, about 2:1, while for men over 70 years it was 1.5:1. This study was very important to suggest a clear association between tobacco consumption and diseases, particularly lung cancer. In fact during the period of the

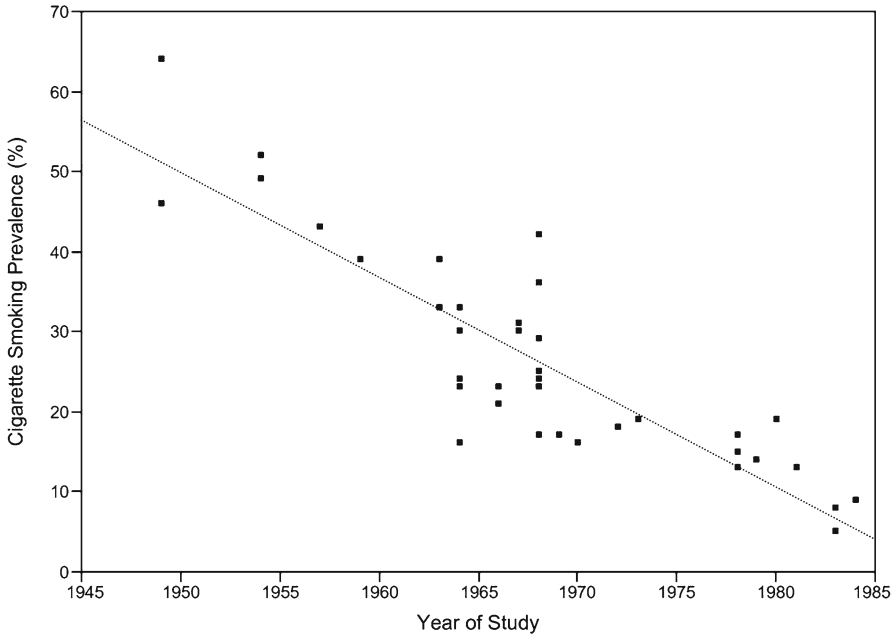


Fig. 9.2 Decreasing trend of cigarette smoking prevalence among physicians in the USA between 1949 and 1984. From: The historical decline of tobacco smoking among United States physicians: 1949–1984. Smith DR (2008) *Tob Induc Dis* 4:9

study all the enrolled doctors reduced its cigarette consumption and consequently lung cancer became less common as the study progressed, but other cancers did not (Doll and Peto 1976). After 40 years follow-up, Doll and colleagues found that the percentage of British physicians who smoked cigars, pipes or cigarettes declined from 62 % to 18 % between 1951 and 1990 (Doll et al. 1994).

As far concerns other countries, we can describe similar trends have also been demonstrated in other countries. In Scandinavia for example current smokers among medical doctors decreased from 74 % (1952) to 19 % (1984) in Norway, from 34 % (1969) to 19 % (1984) in Finland, and from 64 % (1970) to 28 % (1989) in Denmark and from 46 % in 1969 to 37 % in 1972 in Sweden (Faith-Ell and Wilhelmssen 1973; van Reek and Adriaanse 1991).

The research by Hay reported smoking rates of New Zealand doctors declined from 20 % in 1976 to 15 % in 1981 and to 5 % in 1996 (Hay 1998).

The prevalence of smoking among Japanese male physicians decreased from 27.1 % in 2000 to 21.5 % in 2004 and then to 15.0 % in 2008 (Kaneita et al. 2010). A systematic review conducted by Abdullah and colleagues 2011 shows that in China current smoking prevalence among physicians ranged from 14 % to 64 %, with substantial differences by gender (men: 26–61 %; women: 0–19 %).

Nevertheless, in some countries medical doctors still smoke at high rates. For example in Italy, a recent study carried out in several Italian hospital enrolling

more than 1,000 health-care professionals, revealed a prevalence of current smokers accounting for 44 % and medical doctors for 33.9 %. Such smoking rate is much higher than the rate of smokers among the general Italian population (22 %) (Ficarra et al. 2011).

Only few studies focused their attention on investigating smoking habit by different medical specialties. For example in the 1960s Tate and Fulghum (1965) reported that the smoking rate among Florida physicians was 40 % in urology, 37 % in obstetrics/gynaecology, psychiatry and general practice, while Coe and Brehm (1971) registered that 31 % of internists and 29 % of general practitioners smoked. In addition in 1968 Eisinger (1972) and Tamerin and Eisinger 1972 found that 36 % of paediatricians and 42 % of psychiatrists, respectively, smoked cigarettes. Fortmann and coll (Fortmann et al. 1985) reported that primary care physicians had the highest smoking prevalence rate by speciality.

Finally we would like to underline a paradox: between 5 % and 19 % of *pulmonary* physicians were current smokers (Sachs 1984).

We can try to examine what could be the reasons of the high rates of smoking among medical doctors, especially in some countries, showing that tobacco control measures have not been uniformly successful worldwide. The main potential reason for the large smoking prevalence among health-care workers might be high occupational stress, which is considered a key factor in addition to addiction, enjoyment and peer influence.

9.3 Smoking Prevalence Among Nurses

Smoking among nurses has been recognised as a serious concern affecting the profession since the 1970s, when female registered nurses smoked at a higher rate (38.9 %) than women in the US population (32.0 %) and at a substantially higher rate than physicians (21 %) (*U.S. Department of Health and Human Services* 1980).

Smoking prevalence decreased among nurses between the early 1970s and the 1990s (Nelson et al. 1994), from 31.7 % to 18.3 % among registered nurses (RNs) and from 37.1 % to 27.2 % among licensed practical nurses (LPNs), However, the smoking rates for nurses remained higher than for physicians or dentists.

In 1999, LPNs continued to smoke at higher rates than RNs: 21.7 % versus 38 %, respectively (Collins et al. 1999). In a critical review of the literature, Rowe and Macleod-Clark (2000a) identified high smoking rates amongst nurses (39–48 %) in the 1980s, triggering an increase in the number and quality of international studies into tobacco smoking in the nursing profession.

Prevalence data from the Tobacco Use Supplement of the 1992–1993 “*Current Population Survey*” showed that among registered nurses (RNs), 18.2 % were current smokers and 21.6 % were former smokers and that among LPNs, 28.9 % were current smokers and 17.3 % were former smokers (Department of Commerce, Census Bureau, 1995).

Smith and Leggat (2007c) identified in a recent international review that the average prevalence of smoking amongst nurses was around 20 % with trends in some countries supporting greater reductions in smoking rates.

The USA, for example has been proactive with a national programme designed to help nurses quit (<http://www.tobaccofreenurses.org/>) and has continued to see a progressive decline in smoking prevalence amongst 237,648 women in the Nurses' Health Study, from 33.2 % in 1976 to 8.4 % in 2003 (Sarna et al. 2008). Tobacco consumption amongst nurses in Australia declined from 53 % in 1976 (Kirkby et al. 1976) to 21 % in 1999 (Hughes and Rissel 1999) and in Canada from 32 % in 1982 (Senior 1982) to 12 % in 2002. Smoking rates amongst nurses in the UK fell from 40 % in 1984 (Spencer 1984) to 20 % in 1993 (Hussain et al. 1993). Many nations remain increasingly burdened by the tobacco epidemic, for example high smoking prevalence rates can be seen amongst nurses in Italy (36 %) (Proietti et al. 2006), Greece (57 %) (Vagropoulos et al. 2006), Turkey (45 %) (Sezer et al. 2007) and Bosnia and Herzegovina (51 %) (Hodgetts et al. 2004).

Tobacco smoking in Jordan is common among both health professionals and the general population, especially among men. A recent series of surveys in Jordan estimated smoking rates of 24.9 % among youth, with a 76.3 % self-report of SHS exposure (Al Qaseer and Batarseh 2009), 22.4 % among male physicians (Merill et al. 2007) and 28.6 % among college students (Haddad and Malak 2002; Haddad and Pertro 2006) which rose to 35 % in 2008 (Khader and Alsadi 2008) Jordanian nurses had a slightly higher percentage who desired to quit smoking compared with the percentage in the Northern Ireland study (77 % vs. 73 %) (McCarty et al. 2001).

The National Lifestyles, Attitudes and Nutrition Survey in Ireland (Morgan et al. 2008) found that 29 % (27 % in 2002) of respondents were smokers, 31 % men and 27 % women. The highest prevalence rates of smokers found in the age groups 20–25 years (28 %) and 26–30 years (34 %).

There has been a lag in research into the smoking prevalence amongst Australian nurses since the 1990s. In Australia in 1991, Nagle et al. (1999) conducted a survey of 388 nurses and found 22 % of them to be current smokers. Similarly in 1997 a survey of 610 nurses found 21 % of them to be current smokers (Hughes and Rissel 1999). These results were just below the smoking rates amongst women in the Australian community at the time (23.8 % in 1992; 23.2 % in 1995) (Hill and White 1995; Hill et al. 1998). Recent results, published on the New Zealand Census 2006, indicate that comparable nations have been successful in further reducing smoking rates amongst nurses, with smoking rates of 13 % amongst female nurses and 20 % amongst male nurses (Edwards et al. 2008). Nursing is a predominantly female occupation and data suggest that more than 70 % of women who smoke daily express a desire to quit regardless of age or ethnicity (Bialous et al. 2004).

Approximately half of all smokers will make a quit attempt each year and around 95 % of quitters will fail on any single attempt (Fiore and United States Tobacco Use and Dependence Guideline Panel 2000).

The majority of nurses commence smoking prior to entering nursing training and the reasons for continued smoking are similar to that of the female adolescent population (Jenkins and Ahijevych 2003; O'Connor and Harrison 1992; Rowe and

Macleod-Clark 2000a, b; Rowe and Macleod-Clark 2000a, b; Clark and McCann 2008). In a survey of 366 undergraduate nursing students, Clark and McCann (2008) found that peers and friends were an important influence on the decision to commence smoking. During their training most of the nursing students wanted to cease smoking, multiple quit attempts were common and barriers to stopping included pleasure obtained from smoking and the effects of stress.

It is important to understand the profiles and smoking behaviours of nurses, and attitudes to smoking cessation strategies, in order to improve nursing efforts towards reducing tobacco-related burden of disease.

Elements of work environment including shift work, heavy physical job strain and level of empowerment in the workplace are amongst the important factors that have an impact on smoking behaviour in nurses (Bialous et al. 2004; Sanderson et al. 2005). The prevalence of smoking has been reported as higher in certain specialty areas such as psychiatry, gerontology and emergency departments (Trinkoff and Storr 1998a). Data on smoking prevalence by nursing specialties show higher rates of smoking among psychiatric (23 %), gerontologic (18.2 %), and emergency nurses (18 %), and lower rates among paediatric critical care nurses (7.6 %) and nurses working in general paediatrics, women's health and school settings (9.6 %) (Trinkoff and Storr 1998b). Lower smoking rates have been observed in oncology nurses (4.5 %) (Lally et al. 2008) and also paediatric critical care nurses (Trinkoff and Storr 1998b).

The reasons for this are unclear, although these have been considered high stress areas for work, and the psychological level of job demands for nurses have been associated with the psychological aspects of nicotine dependence (Ota et al. 2004): for addicted tobacco users, the lack of nicotine leads to withdrawal symptoms including, but not limited to, headache, nausea, constipation or diarrhoea, fatigue, drowsiness and insomnia, irritability, difficulty concentrating, anxiety, depression and cravings.

Oncology nursing organisations have been active in research studies describing advocacy activities of nurses in the prevention of cancer (Lally et al. 2008). Whether areas of nursing which focus more on preventive health care, such as oncology and paediatrics, influence smoking behaviour of nurses remains unclear too.

Smoking among nurses, LPNs and nursing students has been described for more than 50 years but most published studies addressing smoking prevalence among nurses are limited in both sample size and setting. Moreover, research and intervention efforts focused on assisting nurses with cessation have been limited (Gorin 2001; Kitajima et al. 2002; McKenna et al. 2003).

Ironically, nurses with a smoking history have contributed to our knowledge about the impact of tobacco on women's health through their participation in the Nurses Health Study (U.S. Department of Health and Human Services 2004).

More than 70 % of the women who smoked daily expressed a desire to quit smoking regardless of ethnicity or age (U.S. Department of Health and Human Services 2004).

Women were as likely as men, or more likely, to have attempted smoking cessation in the preceding year and equally likely to have maintained abstinence (Centers for Disease Control and Prevention 1994).

9.4 Public Awareness About Smoking Habits Among Health Professionals

Smoking is very much a part of social unity, whether in the workplace or at home.

National and international statistics highlight the fact that tobacco smoke is the greatest single preventable risk factor for morbidity and mortality within the general population: each year more than five million people worldwide die from smoking-related illnesses (WHO 2003) and globally, tobacco use will kill an estimated eight million people annually by 2030 (WHO 2008).

Through both primary and secondary exposure, tobacco use affects every system in the body and every patient group to whom nurses provide care in every nation (NCI 1999; DHHS 2004; Malone 2006).

Research has found that smoking cessation interventions provided at inpatient level can improve short- and long-term morbidity and mortality rates and also reduce overall health care: tobacco use cessation gives immediate and major health benefits and is the “gold standard” in cost-effective disease prevention strategies (Eddy 1992; Maciosek et al. 2006).

The treatment of tobacco-related diseases makes up an economic burden to the health-care system as well as to society due to the fact that almost half of those who die due to smoking die before the age of 70 (Peto 1994).

A number of studies have pointed to the potential value of health professionals taking an active role in facilitating smoking cessation in general population (Padula 1992; Katz et al. 2012) and these professionals are in an ideal position for providing smoking-related counselling to their patients and could be the largest workforce providing effective smoking cessation interventions and powerful advocates for tobacco free communities; studies have shown that patients are often responsive to counsel received from health-care professionals (Hauser et al. 2002; Sharp and Tishelman 2005). As an example, there is evidence that in particular setting, i.e. the Emergency Department (ED), nurses and physicians can effectively deliver efficiently smoking cessation counselling to smokers using the 5As framework (ask–advise–assess–assist–arrange) (Katz et al. 2012). In the ED setting, Bernstein and colleagues 2011 performed a clinical trial randomising two types of treatment for smokers: (1) usual care, accompanied by giving a smoking cessation brochure or (2) enhanced care, receiving the brochure, a motivational interview, nicotine patches and a phone call at 3 days. After 3 months, differences between these two groups did not exist (quitting rates 13.2 % vs. 14.7 % in the groups, respectively), demonstrating that even low-intensity screening and referral may prompt substantial numbers of ED smokers to quit or attempt to quit.

In a systematic review conducted by Rigotti et al. 2007, the effectiveness of interventions for smoking cessation initiated for hospitalised patients was assessed. Analysing 17 randomised and quasi-randomised clinical trials, these authors found that only behavioural interventions of high intensity that begin during a hospital stay and include at least 1 month of supportive contact after discharge are effective in promoting smoking cessation among hospitalised patients (OR = 1.65; 95 % CI: 1.44–1.90) (Rigotti et al. 2007).

Another systematic review demonstrated there is evidence that medical advice increased the success of quit attempts. Offering assistance by medical doctors is more effective than opportunistic brief physician advice to stop smoking among smokers not selected by motivation to quit, both for behavioural support (RR = 1.69; 95 % CI: 1.24–2.31) and for offering medication (RR = 1.39; 95 % CI: 1.25–1.54) (Aveyard et al. 2011).

Smoking cessation guidelines, developed from best available evidence, recommend that health-care professionals should assess patients' smoking habits and give opportunistic smoking cessation advice as part of routine patient care (Fiore et al. 2000; Raw et al. 1998; Australian Department of Health and Ageing 2004; Fiore and United States Tobacco Use and Dependence Guideline Panel 2008). Nursing regulatory bodies and the community as a whole expect that nurses should counsel patients in their care on health-related issues (Saarmann et al. 2000; Shuttleworth 2004).

A meta-analysis of nurses' effectiveness in smoking cessation demonstrated a significant increase in the likelihood of people quitting (Rice and Stead 2008); however, incorporating smoking cessation care into routine practice has been difficult to achieve (Nagle et al. 1999; Gomm et al. 2002; Scanlon et al. 2008).

Acute care nurses are in a unique position to provide smoking cessation counselling as they not only comprise the largest group of health-care professionals but also administer care 24 h a day, 7 days a week.

In a survey of 415 practice nurses in Kansas found that attendance at tobacco-related continuing education was a significant predictor of respondents' implementing smoking cessation programmes with patients.

Patients in acute settings are physically vulnerable and are (on some level) contemplating or actively seeking advice on how they can improve their health, for instance by smoking cessation (Conroy et al. 2005). This "window of opportunity" has been shown to increase health motivation and has also been associated with increased abstinence from smoking while in the acute care setting.

As the largest group of health professionals, with an important role of caring for the under-served nurses play an essential role in helping patients stop smoking and in reducing disparities in access to tobacco control services and programmes. The efficacy of nurses in the delivery of tobacco cessation treatment has been supported by numerous studies (Rice and Stead 2008).

Significant progress in the reduction of cigarette smoking has been made in the past decades, but tobacco use continues to be the leading cause of preventable illness and death in the USA.

The goal of the U.S. Department of Health and Human Services, as expressed in Healthy People 2010, was to reduce overall smoking prevalence to 12 %.

Despite calls for international efforts in tobacco control, responses from nursing organisations throughout the world have been inconsistent, and nurses' involvement in tobacco control remains a promising area for growth (Percival et al. 2003). Evidence suggests that nurses are willing and able to provide health promotion activities and are regarded as highly effective in this area (Saarmann et al. 2000).

However, studies demonstrate that acute care nurses currently lack the knowledge, skills and confidence to be effective when providing smoking cessation interventions. In a qualitative study of 12 acute care nurses in Scotland, Whyte et al. (2006) identified that nurses had opportunities to advise patients about smoking but did not always recognise these or have the knowledge to respond appropriately (Gomm et al. 2002): nurses often had received no formal training in providing cessation advice. These findings are similar to those of Nagle, Schofield and Redman (1999) in New South Wales who found that 75 % of respondents believed nurses should counsel patients who wanted to stop smoking but perceived that nurses lacked the skills and knowledge necessary to provide suitable counselling. Nurses are more likely to perform smoking cessation interventions if they believe they have the necessary skills and knowledge.

Scanlon et al. (2008) showed that nurses who agreed to have a responsibility to counsel patients on health-related conditions lacked awareness that smoking contributes to a wide range of specific health conditions and lacked knowledge of smoking cessation interventions, reducing their willingness to provide cessation interventions to patients.

Also Nagle et al. (1999) found that Australian nurses had a poor knowledge of the health effects of smoking and strategies for smoking cessation. Whyte et al. (2006) found that, although nurses would participate in interactions about smoking with patients, the quality of their knowledge was poor and the nurses have many of the same misconceptions about cessation as the general public.

Indeed, although nurses have a general knowledge about the harmful health effects of tobacco use, they do not recognise the biochemical processes related to nicotine addiction and withdrawal and the benefits of scientifically based combinations of strategies to achieve cessation (Sarna et al. 2000a).

Nagle et al. (1999) found that 63 % of their sample was too busy to do this, while lack of time was not a major consideration for nurses surveyed by Gomm et al. (2002). In general, respondents were willing to implement smoking cessation interventions. Nearly one-quarter were already doing so, while over half indicated that they were ready to intervene but needed help to do so. This suggests that they would welcome additional training and support to enable them to implement effective interventions. The lack of preparation in providing smoking cessation interventions during nursing education in China (Sophia et al. 2007) could be one of the main barriers preventing nurses from such practices, although extrinsic barriers such as lack of motivation among patients, heavy workload and lack of time were also important. Lack of education about tobacco has been identified as a barrier among nurses and other health-care professionals too (Lancaster et al. 2000; Sarna et al. 2000b; Sarna et al. 2001).

There were found significant differences in perceived competence and other aspects of cessation interventions between nurses with prior training in smoking cessation counselling and others without such training. Nurses with training in smoking cessation counselling showed more positive attitudes and engaged in smoking cessation interventions more frequently, which about their roles and responsibilities towards smoking cessation interventions, intervened more frequently, and perceived

greater competence. So, the positive correlation between knowledge and willingness also suggests that lack of knowledge is a factor affecting nurses' willingness to provide smoking cessation advice.

Also the literature suggests that nurses who smoke have feelings of guilt and shame about their own smoking practices and may perceive a lack of understanding by non-smoking colleagues and managers about their need of support for smoking cessation (Bialous et al. 2004).

Scanlon et al. (2008) in his study had indicated that there needs to be more emphasis on the effects of smoking in both undergraduate and post-registration nursing education, along with discussion of smoking cessation strategies, so nurses are more knowledgeable, confident and ready to provide interventions for hospitalised patients.

Numerous studies have shown that the inclusion of tobacco control in professional curricula is necessary to increase the number of nurses prepared to deliver effective smoking cessation interventions (Bakker et al. 2005; Hall et al. 2005; Hornberger and Edwards 2004; McCarty et al. 2001; Sarna et al. 2000a; Yang et al. 2006).

Recent reviews of curricula of schools of nursing in the USA (Hornberger and Edwards 2004; Sarna et al. 2001; Wewers et al. 2004) and schools of medicine (Roddy et al. 2004) showed inadequate content and time spent on smoking and smoking cessation. Gaps in nurses' education continue to persist as smoking is marginalised as a lifestyle issue and evidence-based smoking cessation interventions have not received appropriate priority in classroom teaching or clinical practice.

Previous research in western countries has shown that nurses' attitudes and self-perceived competence were significantly related to smoking cessation practice (Borrelli et al. 2001; Johnston et al. 2005). The majority of Chinese nurses in this survey reported positive attitudes towards tobacco control policies and their role and responsibility in helping patients stop smoking. Less than half (48 %) believed that only non-smokers could intervene with smoking. Sarna et al. (2000b) reported that smoking status negatively affected tobacco control attitudes. In that study, fewer smoking nurses than non-smokers supported tobacco control policies (e.g. policies that restrict tobacco use in public places, ensure smoke free environments, increase cigarette taxes, etc.). An important action will be monitoring the trends of smoking among nurses in China because this may influence their attitudes about tobacco control.

So, despite recognition of their professional responsibility as models of good health practices and known health risks associated with smoking, many nurses continue to smoke (Mackay and Eriksen 2002) and there is the evidence that nurses who smoke are not adequately fulfilling this role. Despite the emphasis on nurses serving as role models for a healthy lifestyle, entering the nursing profession did not provide an adequate incentive to quit, or the resources for cessation, as might be expected (Jenkins and Ahijevych 2003). Prepared nurses who are motivated to act can save millions of lives by helping smokers quit and by supporting more effective tobacco control measures (Sophia et al. 2007).

Smoking among nurses remains a barrier to interventions with patients because of their smoking habits (Jenkins and Ahijevych 2003; Rowe and Macleod-Clark 2000a; Sarna et al. 2000a): nurses who smoke are less likely to participate in health

promotion counselling with their patients who smoke; smoking in nurses is one of the many factors acting as a deterrent to their provision of smoking cessation care (Feeney et al. 1997; Hughes and Rissel 1999; Nagle et al. 1999; Sarna et al. 2000b; McKenna et al. 2001).

Most smoking habits will have been well established prior to becoming a nurse, some of the nurses started to smoke before entering nursing school, whereas others described starting to smoke as they entered the nursing profession: there have been only isolated efforts by nursing schools to promote smoking cessation among nursing students. Thus, in addition to the identified need to increase tobacco-related content in the curricula of nursing schools (Rowe and Macleod-Clark 2000b; Sarna et al. 2000b; Wewers et al. 2004), it is important for nursing schools to provide support for students who want to quit.

Findings indicate that nurses quit smoking for many of the same reasons that other women quit (e.g. pregnancy, their children, or concern for their health) (U.S. Department of Health and Human Services 2004).

Many nurses who smoke, but desire to quit, have had multiple unsuccessful quit attempts and perceive stress, fear of weight gain and anxiety as barriers to quitting. The majority of the participants were overweight or obese, and it is consistent with the literature on women and smoking that overweight and obesity are higher among former smokers than among current smokers, lending support to the fears women express about gaining weight when they quit smoking. Thus, cessation intervention for nurses and women should address the potential for weight gain and weight management strategies.

However, research into the smoking behaviour of nurses has been inconsistent and has not kept pace uniformly with government surveys on smoking prevalence in the general population (Rowe and Macleod-Clark 2000a) and despite the evidence that nurses continue to smoke at high rates, limited support has been provided by the nursing profession to help nurses quit, and published studies have not detailed the cessation strategies used by nurses who have achieved long-term abstinence (Chalmers et al. 2001).

There is clearly a need for the nursing profession to send out strong messages to nurses about smoking, to develop a systematic approach to monitoring their smoking behaviour and to provide support for all nurses who smoke to quit.

Existing scientific findings about smoking and the best strategies to enhance cessation report that theoretical perspectives describing behavioural change have guided cessation interventions on a personal and professional level. Nurses' struggles with addiction, pattern of quit attempts and relapse were similar to what has been described in the general population (Fiore et al. 2000). To be effective in supporting nurses' quit efforts, interventions should include psychological and behavioural preparation, with reasonable expectations for withdrawal.

The development of personal factors that facilitate cessation among nurses was based on Bandura's description of self-efficacy and empowerment to quit. High perceived self-efficacy predicted individual success in taking action to quit smoking. Low self-efficacy has similarly been linked with increased risk for relapse. Thus, nurses should be convinced that their behaviour will lead to successful quitting

and that social support and skills training will increase their success at cessation. However, if they are unable to access these resources, they may have low self-efficacy. The nicotine addiction model (Fiore et al. 2000) interfaces with self-efficacy and quitting behaviour because addiction could interfere with self-efficacy if not properly addressed.

Additionally, more former smokers recognised social factors as important influences on smoking behaviour, and smoke-free workplaces offered an incentive to quit. Not surprisingly, in some cases, treatment of patients suffering from tobacco-related diseases served as a motivating factor for nurses to quit.

This information was used to develop the **Tobacco Free Nurses Initiative**, the first ever national programme to support nurses' smoking cessation efforts (<http://www.tobaccofreenurses.org>).

9.5 Smoking Among Health Profession Students

Even if tobacco use is widely recognised as one of the most important preventable risk factors for the onset of several chronic diseases such as cardiovascular and respiratory disease, many types of cancer and non neoplastic pathology, health professionals are aware that tobacco smoke has a leading role as the most preventable cause of death and disability; paradoxically, they are not sufficiently conscious of their fundamental role to help their patients for quit smoking (Fiore et al. 1994; Zwar and Richmond 2006). In fact in many countries, physicians and nurses forgot their key role as behaviour model and so the prevalence of smoking is higher among health-care workers than among the general population (Ficarra et al. 2011; Ruiz-Canela et al. 2009).

In terms of public health, helping people to stop smoking is widely demonstrated to be economically opportune in term of cost-efficacy. However, only one in five patients receive advice and assistance to quit smoking, and a very low percentage receives a proper pharmacological therapy (Ferketich et al. 2006). A possible reason for such an incongruence can be recognised in the lack of complete training in smoking cessation techniques in medical curricula, while there is evidence that introducing tobacco knowledge into the curriculum is effective in reducing the prevalence of smoking among medical students (Richmond and Kehoe 1997).

In America, Europe and Asia several studies investigated knowledge, attitudes and behaviours of students towards tobacco use, especially among medical and sanitary students, which represent the future medical practitioners (Ferrante et al. 2010; Melani et al. 2000; Heras et al. 2000; Dekker et al. 1993; Waalkens et al. 1992; Clareboets et al. 2010; Tirodimos et al. 2009; Raupach et al. 2009; Borges et al. 2008).

We can recognise basic weaknesses in many of these surveys: the absence of a standardised method used for the definition of smoker status, the use of different methods in the sampling process and different questionnaires and data collection procedures (Smith and Leggat 2007c).

In order to create a standardised research method, the WHO, US Centers for Disease Control and Prevention (CDC) and the Canadian Public Health Association developed and implemented a single protocol: the Global Health Professions Student Survey (GHPSS) (Warren et al. 2009).

GHPSS is part of the Global Tobacco Surveillance System (GTSS), which collects data through three surveys: the Global Youth Tobacco Survey (GYTS), the Global School Personnel Survey (GSPS) and GHPSS.

GHPSS is a school-based survey of third-year students pursuing advanced degree in dentistry, medicine, nursing or pharmacy. The GHPSS questionnaire is composed by core questions on demographics, prevalence of cigarette smoking and use of other tobacco products, exposure to second hand smoke, desire to quit smoking, and training received to provide patients counselling on cessation techniques (Warren et al. 2011a).

In this way researchers can apply this single method in many different countries around the World; this condition allows to coherently compare different geographical situations, translating and adjusting the questionnaire in the different languages.

Since 2005 the GHPSS was performed in several countries in South America, Europe, Africa and Asia, and in Table 9.1 the prevalence of current smoking in different countries is reported.

Table 9.1 Prevalence of current smokers among health professional students in GHPSS surveys

Survey year	Country	Prevalence % current smokers (95 % CI)
2005	Albania	43.3 (40.7–45.9)
2007	Algeria	9.0 (8.1–9.9)
2005	Argentina	35.5 (33.6–37.4)
2006	Armenia	20.4 (16.1–25.4)
2006	Bangladesh	27.5 (21.3–34.7)
2006	Bolivia	41.1 (35.3–47.2)
2006	Bosnia and Herzegovina	40.3 (39.2–41.5)
2006	Bangladesh	27.2 (20.8–34.8)
2006	Brazil, Rio de Janeiro	16.9 (15.6–18.2)
2005	Cambodia	6.4 (4.1–9.7)
2008	Chile	28.4 (27.1–29.6)
2006	Costa Rica	32.8 (CI missing)
2005	Croatia	36.6 (34.1–39.2)
2008	Cuba	29.5 (27.6–31.4)
2006	Czech Republic	21.7 (19.5–24.0)
2005	Egypt	7.9 (5.7–10.7)
2006	Ghana	1.3 (0.6–2.8)
2008	Guatemala	22.5 (19.8–25.4)
2005	India	11.6 (8.8–15.2)
2006	Indonesia	8.6 (5.4–13.5)
2007	Iran	5.6 (4.6–6.9)
2005	Iraq	17.5 (15.4–19.8)
2008	Jamaica	6.7 (4.3–10.3)

(continued)

Table 9.1 (continued)

Survey year	Country	Prevalence % current smokers (95 % CI)
2008	Kenya	9.8 (7.7–12.5)
2008	Kyrgyzstan	36.6 (33.9–39.4)
2006	Lebanon	28.2 (25.1–31.4)
2006	Libyan Arab Jamahiriya	10.1 (9.1–11.2)
2006	Lithuania	27.3 (23.5–31.4)
2006	Mexico	35.3 (29.8–41.3)
2006	Myanmar	12.4 (11.7–13.1)
2005	Nepal	23.5 (9.1–48.5)
2008	Niger	37.1 (33.9–41.7)
2008	Panama	11.1 (9.6–12.9)
2008	Paraguay	22.3 (20.9–23.8)
2006	Peru	32.7 (28.5–37.3)
2006	Republic of Serbia	34.7 (33.3–36.2)
2006	Russian Federation	38.8 (37.6–39.9)
2006	Saudi Arabia	11.6 (9.2–14.6)
2006	Serbia	34.7 (33.2–36.2)
2006	Slovakia	30.4 (29.0–31.9)
2006	Slovenia	20.9 (17.3–25.0)
2006	Sri Lanka	4.1 (3.4–5.0)
2006	South Korea	16.0 (12.0–21.1)
2007	Sudan	7.7 (6.3–9.4)
2006	Syrian Arab Republic	16.8 (16.2–17.5)
2006	Thailand	2.1 (1.6–2.9)
2007	Tunisia	9.9 (8.6–11.3)
2005	Uganda	2.8 (1.8–4.2)
2008	Uruguay	32.3 (31.2–33.3)
2007	Vietnam	11.2 (10.6–11.7)
2007	Gaza Strip	22.7 (19.7–26.0)
From: Tobacco use, exposure to secondhand smoke, and cessation counseling among medical students: cross-country data from the Global Health Professions Student Survey (GHPSS), 2005–2008. Warren CW, Sinha DN, Lee J, Lea V, Jones NR. <i>BMC Public Health</i> . 2011 Feb 1;11:72.		
2009	Greece	28.8 (24.2–33.8)
From: Tobacco Use, Exposure to Secondhand Smoke, and Cessation Counseling Among Health Professions Students: Greek Data from the Global Health Professions Student Survey (GHPSS). Barbouni A, Hadjichristodoulou C, Merakou K, Antoniadou E, Kourea K, Miloni E, Warren CW, Rahiotis G, Kremastinou J. <i>Int J Environ Res Public Health</i> . 2012 Jan;9(1):331–42. Epub 2012 Jan 19		
2009	Italy	31.3 (27.8–34.9)
2009	Germany	28.0 (14.6–21.4)
2009	Spain	28.9 (24.2–33.6)
2009	Poland	28.7 (25.5–32)
From: Tobacco use among medical students in Europe: results of a multicentre study using the Global Health Professions Student Survey. La Torre G, Kirch W, Bes-Rastrollo M, Ramos RM, Czaplicki M, Gualano MR, Thümmel K, Ricciardi W, Boccia A; GHPSS Collaborative Group. <i>Public Health</i> . 2012 Feb;126(2):159–64. Epub 2011 Dec 15		

Warren and colleagues (2011b) applied the GHPSS from 2005 to 2009 in 44 countries, studying the behaviours of Dentistry students.

The results of his study showed a wide range of percentage of current smoker students: the highest value above 40 %, has been measured in six countries: Kyrgyzstan, Macedonia, Moldova, Russian Federation, Chile and Mexico, while in three countries has been measured rates <5 % : Libya, Thailand and Cambodia.

Regarding African countries, 10.2 % of dentistry students currently smoked cigarettes in Algeria, and 16.7 % currently smoked cigarettes in Senegal, with males significantly more likely to smoke than females in both sites. In Eastern Mediterranean regions the percentage of current smoker students ranged from 33.4 % of Gaza Strip/West Bank to 2.3 % of Libya, with two countries reporting rates over 20 %: Lebanon 31.6 % and Syria 23.6 %.

In Europe, five countries reported percentage of current smokers over 40 %: Bulgaria 52.2 %, Kyrgyzstan 44.0 %, Macedonia 52.5 %, Moldova 65.2 % and Russian Federation 43.7 %; while the lowest rates were founded in Slovenia 17.9 % and Latvia 19.6 %. In American countries current cigarette smokers was at least 20 % in all sites, except Guatemala, Guyana, Panama and Paraguay and over 40 % in Chile and Mexico.

In the South-East Asia region, current cigarette smoking ranged from over 20 % in Bangladesh and Myanmar to <5 % in Thailand.

In Western Pacific region, current cigarette smoking ranged from 33.3 % in Mongolia to 2.1 % in Cambodia.

Regarding exposure to second hand smoke in public places, over 70 % of the students reported that they had experienced such exposure in the past 7 days in 32 of the 48 sites.

In a worldwide view, in this study over 80 % of the students thought dentists have a role in giving advice about smoking cessation to patients in 37 of 46 sites, with 26 over 90 %. The lowest percentage was in Slovakia (56.8 %). Over 80 % of the students thought health professionals should get specific training on cessation techniques in 40 of the 47 sites, with 25 over 90 %. The lowest was in Myanmar (69.3 %). Less than 40 % of the students reported having ever received some kind of formal training in their professional school on cessation approaches to use with their patients in 40 of the 47 sites. This percentage was <20 % in 27 sites and <10 % in 8 sites.

Over 50 % of the students had received formal training in Fiji (100 %), India (54.8 %), Lithuania (60.0 %) and Moldova (61.3 %).

From 2005 to 2008, Warren and colleagues 2011b performed a similar survey among medical student collecting data from 47 countries.

Among medical students, in three countries the current smoking rates was above 40 % (Albania, Bosnia and Herzegovina and Bolivia) and three sites had rates <5 % (Uganda, Sri Lanka and Thailand). Males were more likely than females to smoke cigarettes in 37 of 48 sites; while females had higher rates than males in Serbia, Chile and Thailand and there were no gender differences in 8 of the 48 sites. In Africans countries, 37.7 % of medical students currently smoked cigarettes in Niger; while <10 % smoked in the other three African sites. Current cigarette smoking ranged from over 20 % in Gaza Strip/West Bank (22.7 %) and Lebanon (28.2 %) to

<10 % (Egypt, Iran, Sudan and Tunisia) in Eastern Mediterranean region. In Europe, current cigarette smoking was over 30 % in every site, except Armenia, Czech Republic, Lithuania and Slovenia. In American sites, current cigarette smoking was over 20 % in all sites, except Brazil, Jamaica and Panama. In the South-East Asia Region, current cigarette smoking was over 20 % in Bangladesh and Nepal and <5 % in Sri Lanka and Thailand. In Western Pacific region, current cigarette smoking ranged from 16.0 % in South Korea to 6.4 % in Cambodia.

Regarding health professional roles and training, over 80 % of the students thought health professionals have a role in giving advice about smoking cessation to patients in 42 of 46 sites, with 30 over 90 %. The lowest was in Slovakia (59.7 %). Over 80 % of the students thought health professionals should get specific training on cessation techniques in 41 of the 48 sites, with 33 over 90 %. The lowest was in Czech Republic (60.8 %). Less than 40 % of the students reported having ever received some kind of formal training in their professional school on cessation approaches to use with their patients in 46 of the 48 sites; <20 % in 16 sites and <10 % in 6 sites. Over 40 % of the students had received formal training in Niger (46.4 %) and Myanmar (43.7 %) (Warren et al. 2011b).

As far Europe is concerned, from March to May 2009 GHPSS was conducted in a cross-country, cross-sectional study among 12 medical schools in four European countries (Germany, Italy, Poland and Spain) (La Torre et al 2012).

The overall response rate was high: 92.0 %. The global prevalence of smoking among medical students was 29.3 % (95 % CI 28.1–34.7), with rates ranging from 28.0 % in Germany to 31.3 % in Italy. Concerning gender differences in Germany, Italy and Spain, male students were more likely to be current smokers than female students, although the difference was only significant in Germany ($P < 0.0001$). The opposite was found in Polish medical students, where the prevalence of smoking was higher in females. Regarding roles and training, only 16.5 % of respondents had received smoking cessation training during their time at medical school, with significant differences between Italy (3.5 %) and the other countries ($P < 0.001$). In terms of knowledge of smoking cessation methods, the vast majority (89.8 %) of medical students were aware of nicotine patches and gum (highest prevalence in Spain, 96.3 %), and 24.4 % were aware of the use of antidepressants, such as Bupropion or Varenicline (highest prevalence in Germany, 33.6 %).

Focusing on Italian condition, the 2009 survey was a multicentre cross-sectional pilot study carried out in five Italian Schools of Medicine (Sapienza University of Rome, Catholic University of the Sacred Heart of Rome and the Faculties of Medicine of Chieti, Torino and Palermo). The prevalence of current smokers was 31.4 % (95 % CI: 28.1–34.7), higher than the prevalence of 22 % in general population aged between 15 and 24 years. Regarding attitudes towards tobacco use, more than half considered health professionals as behavioural models for patients, and around 90 % thought health professionals have a role in giving advice or information about smoking cessation. Unfortunately, only 5.8 % of responders had received smoking cessation training during their medical school years. Concerning knowledge about smoking cessation methods, most students had heard about nicotine patches or gum, 45 % about counselling techniques and around 18 % about acetylcholine receptor partial agonists (such as Varenicline or Champix).

Interestingly, medical students who considered health-care professionals as behavioural models had lower likelihood of smoking (OR=0.52; 95 % CI: 0.35 to 0.77).

Finally, considering the high prevalence of smokers among health-care professionals and their primary role as behavioural models, the results from the GHPSS Surveys in the World highlight the importance of focussing attention on the integration of smoking cessation training addressed to medical students.

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