Original Investigation

Beliefs of Stop Smoking Practitioners in United Kingdom on the Use of Nicotine Replacement Therapy for Smoking Reduction

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Abstract

Background: This paper aimed to assess the current beliefs of stop smoking practitioners and managers about using nicotine replacement therapy (NRT) for smoking reduction (SR) and the factors related to these beliefs.

Methods: An online survey was conducted of practitioners and managers working in the 152 English stop smoking services (SSSs). Questions were asked about their beliefs concerning the safety of using NRT for SR.

Results: Sixteen percent and 30% of the sample, respectively, believed that NRT use for a year or more and the concurrent use of NRT and cigarettes was harmful to health. The most commonly reported potential harms of the long-term use of NRT and the concurrent use of NRT and cigarettes were addiction, overdose and mouth cancer. Seventeen percent of the sample also believed that the use of NRT for SR could hinder smoking cessation. Reports differed as a function of the managers' relationship with their commissioner and influence on the commissioning process, while among practitioners as a function of the number of months worked, gender, frequency of update training and whether they advised reduction as a treatment option.

Conclusions: A significant minority of stop smoking practitioners and stop smoking managers believe that NRT use for SR can be harmful to health and undermine smoking cessation. These beliefs should be addressed, especially if the use of NRT in these ways is provided as a route to quitting in SSSs.

Introduction

There is increasing interest in the concept of tobacco harm reduction for smokers who report that they are unwilling or unable to quit. This involves attempting to reduce harm from an activity without ceasing it completely. One type of harm reduction, which has been advocated, is the use of nicotine replacement therapy (NRT) for smoking reduction (SR). Support for this approach comes from clinical trials and population-based data demonstrating that the use of NRT for SR has the propensity to move smokers toward a quit attempt and that it may, with appropriate behavioral support, result in significant reductions in cigarette consumption (Beard et al., 2011; Moore, Aveyard, Connock, Wang, & Fry-Smith, 2009). In recent years, a number of regulatory changes have occurred to the NRT framework in several countries, including the United Kingdom, to allow NRT to be licensed for such purposes (Medicines and Healthcare Products Regulatory Agency, 2010). Proposals have also been made to provide NRT for SR as a route to quitting in stop smoking services (SSSs) in the near future (Department of Health, 2010). SSSs were established in the United Kingdom in 1999 following the publication of the Government White Paper "Smoking Kills" (Department of Health, 1998; West, McNeill, & Raw, 2000) and have been instrumental in reducing smoking rates (Bauld, Bell, McCullough, Richardson, & Greaves, 2010). Although predominantly focusing on abrupt cessation, a number of pilots are already underway, which are assessing the feasibility of extending the services to include advice on SR (Croghan & Chambers, 2011).

It therefore appears timely to assess the role that SSSs may play in this. The current study takes a first step by determining beliefs about the safety of using NRT for SR and the job and personal characteristics associated with these beliefs, among those working at the heart of the SSSs, stop smoking practitioners and stop smoking managers, whose role is to provide combined intensive behavioral support and medication to smokers. Although many factors will influence practice behaviors, beliefs are among the most pivotal (Bonetti et al., 2003; Michie et al., 2005). Such an assessment is important, in that it may help to shape future policies and practice.

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Studies to date suggest that members of the tobacco control community hold varying and contradictory views on harm reduction (Martin, Warner, & Lantz, 2004; Warner & Martin, 2003). Many believe that the introduction of a tobacco harm reduction program alongside traditional tobacco control policies could reduce the rates of smoking cessation or have unintended negative side effects on the health of users (Martin et al., 2004), especially if smokers continue to use NRT for extended periods of time (Stratton, Shetty, Wallace, & Bondurant, 2001). Although these beliefs may be accurate for some forms of harm reduction (Parascandola, Augustson, & Rose, 2009), the current literature points toward the possibility that use of NRT for SR may actually increase the propensity of smokers to quit (Beard et al., 2011; Moore et al., 2009). Health care professionals also appear to hold misperceptions about NRT products. A study in the United States found that a majority of the nurses studied believed that nicotine causes cancer and/or increases the likelihood of a heart attack, and one fifth believed that nicotine patches were as likely to cause addiction as cigarettes (Borreli & Novak, 2007). This is despite evidence to the contrary (Benowitz, 1998; Murray et al., 1996).

It is of interest to determine whether similar beliefs are prevalent among those most directly involved with the smoking population: stop smoking practitioners and stop smoking managers, who would be involved in the implementation of a harm reduction approach in SSSs. On the basis of previous studies, it is possible that inaccurate beliefs will be more prevalent, as lower levels of awareness are found among those focusing on local rather than national tobacco control issues (Warner & Martin, 2003). In order to aid future policies and their implementation, it may also be helpful to determine the factors associated with these beliefs. Personal characteristics including length of time in the job, relationship with others, and involvement in the team may be important (Babin & Boles, 1996), as may characteristics of the job, how much training is provided, and receipt of postqualification updates (McEwen & West, 2001). Such beliefs may also be correlated with practice outcomes including the length of time NRT is recommended for and whether smokers are advised to reduce gradually if they are unable to quit (Borrelli et al., 2001; Warner & Martin, 2003).

Methodology

An email was sent to all 164 SSS managers in United Kingdom on behalf of the National Health Service (NHS) Centre for Smoking Cessation and Training with a link to the survey website and a request to take part and to forward the link to all their staff. Reminders were sent 10 and 20 days later and 3 days preceding the surveys' close. The online survey was open between November 26 and December 24, 2010.This paper reports on a subset of questions, which assessed managers' and practitioners' beliefs about the use of NRT for SR.

The survey collected data on demographic (gender & age) and professional characteristics. Managers were asked: (1) Do you have regular arranged meetings with your commissioner (Yes/No)? (Commissioners are the individuals in the local area organization that funds the service on behalf of the National Health Service.) (2) Do you think that you have a good relationship with your commissioner (Yes/No)? (3) Please indicate how much you agree with the following statements (Strongly agree/Disagree/Unsure/Agree/Strongly agree) a. I feel I am able to influence the commissioning process, b. I feel fully involved in the strategic planning of my service. They were also asked how long they had been working as a manager and the percentage of their time spent managing the SSSs.

Stop smoking practitioners were asked: (1) What is your approach to gradual versus abrupt cessation? (Please select one answer) a. I always use the abrupt cessation model i.e. smokers smoke as they wish until the quit date and stop abruptly at that point, b. I encourage abrupt cessation but allow smokers to cut down gradually if they do not feel they can manage to stop abruptly, c. I encourage smokers to cut down gradually before stopping, (2) How many days "off the job" training did you receive when you started working for the NHS SSS? (Please write number in box), (5) How often do you attend off the job update training? (Once a year/Twice a year/Once every two years). Additionally, they reported how long they had been working in NHS SSS and whether their main role was the provision of intensive support for highly dependent smokers.

Both managers and practitioners were then asked three further questions: (1) "Do you think that nicotine replacement products such as patches and gum are harmful to the health if used for a year or more?" (No/Yes/I don't know). If they answered yes, they were also asked: "What do you think the harms are?" (Lung cancer/Oral-mouth cancer/Other type of cancer/Heart attack/High blood pressure/Other type of heart disease/Emphysema, chronic lung disease, chronic obstructive pulmonary disease (COPD)/Addiction/Overdose/Other please write). (2) "Do you think that nicotine replacement products such as patches and gum are harmful to the health if used while smoking?" (No/Yes/I don't know). If they answered yes, they were also asked: "What do you think the harms are?" (Lung cancer/Oral-mouth cancer/Other type of cancer/Heart attack/High blood pressure/Other type of heart disease/Emphysema, chronic lung disease, COPD/Addiction/Overdose/Other please write). (3) Do you think that using nicotine replacement products such as patch or gum to help with cutting down is likely to promote or hinder quitting? (Promote/Hinder/No effect/Don't know).

Analysis

Differences in beliefs about the effects of using NRT for harm reduction as a function of manager and practitioner personal and job characteristics were assessed using Chi-squared tests, *t* tests or analysis of variance as appropriate. Post-hoc comparisons between means were undertaken using Tukey Honestly Significant Difference.

Results

One hundred and sixty-four managers were contacted. Eighty-five (51.8%) completed the online survey. Of these, 27 were excluded as the questionnaires were incomplete or there were duplicate entries, resulting in a final sample of 58 managers. A mean age of 44.5 ($SD \pm 9.22$) years was reported. Sixty percent ($n = 35$) of the sample were female, and 17.2% ($n = 10$) were male. Twenty-two percent ($n = 13$) failed to report on their gender. Table 1 provides further details of the managers' characteristics.

Table 1. Characteristics of Managers and Practitioners Completing the Survey

Managers ($N = 58$)	
Percentage of current role which involves running an SSSs *M* (*SD*)	83.42 (22.67)
Number of months worked as a manager (months) *M* (*SD*)	44.5 (3.79)
Regular meetings with commissioner % (*n*)	75.9 (44)
Good relationship with commissioner % (*n*)	75.9 (44)
Feels that they are able to influence the commissioning process % (*n*)	
Disagree	20.7 (12)
Agree	56.9 (33)
Unsure	6.9 (4)
Not stated	15.5 (9)
Feels involved in the strategic planning of the service % (*n*)	
Disagree	15.5 (9)
Agree	56.9 (33)
Unsure	12.1 (7)
Not stated	15.5 (9)
Length of NRT use in the SSS they manage % (*n*)	
<12 months	69.0 (40)
>13 months	31.0 (18)
Practitioners ($N = 484$)	
Approach to gradual versus abrupt cessation % (*n*)	
Encourage abrupt	39.3 (190)
Encourage abrupt but allow gradual	49.2 (238)
Encourage gradual	3.9 (19)
Number of days training *M* (*SD*)	4.1 (10.28)
When receive update to training % (*n*)	
Once a year	32.2 (156)
Twice a year	18.6 (90)
Less than once every 2 years	27.9 (135)
Not stated	21.3 (103)

Note. SSS = stop smoking service; NRT = nicotine replacement therapy.

In total, 686 responses were recorded for the practitioners' survey. A response rate could not be calculated because currently it is not known how many practitioners work in the NHS. Of these, 202 were excluded as the respondents reported that they did not see smokers on behalf of an NHS SSS, the files did not contain any data, or there were duplicate entries. For the duplicated entries, the most complete set of answers was retained. This left a sample of 484 practitioners. A mean age 44 (*SD* ± 10.8) years was reported. Seventy-eight percent of the sample were female ($n = 379$), 15% ($n = 72$) male, and 7% ($n = 33$) failed to report on their gender. On average, 59.7% ($n = 289$) reported that their main role was the provision of intensive support for highly dependent smokers. They reported having worked for an average of 59.9 months (*SD* ± 49.94). Table 1 provides further details of the characteristics of the practitioners.

Sixty-nine percent ($n = 375$) of the sample reported that they did not think the continued use of NRT for a year or more was harmful to health (68.9% [$n = 40$] of managers and 69.2% [$n = 335$] of practitioners). Sixteen percent ($n = 85$) reported that they believed that it was harmful to health (12.0% [$n = 7$] of managers and 16.1% [$n = 78$] of practitioners), while 7.9% ($n = 43$) that they did not know (0% [$n = 0$] of managers and 8.9% [$n = 43$] of practitioners). No significant difference in responses was found between managers and practitioners ($\chi^2 = 5.33$, *df* 2, $p = .070$), nor did beliefs differ as a function of the managers' characteristics, the characteristics of their job, relationship with their commissioner, or the length of time NRT was recommended for in their SSS (see Table 2). In contrast, Table 2 shows that practitioners who reported that the long-term use of NRT was harmful to health and those who reported that they "didn't know" had worked as a practitioner for a shorter number of months than those who reported that there were no harmful effects of using NRT for a year or more.

Overall, 57.0% ($n = 309$) of the sample reported that they did not think the concurrent use of NRT and cigarettes was harmful to health (63.8% [$n = 37$] of managers and 56.2% [$n = 272$] of practitioners). Thirty percent ($n = 160$) reported that they believed that it was harmful to health (15.5% [$n = 9$] of managers and 31.1% [$n = 151$] of practitioners), while 4.1% ($n = 22$) that they did not know (0% [$n = 0$] of managers and 4.5% [$n = 22$] of practitioners). Managers were less likely to report that the concurrent use of NRT and cigarettes was harmful to health than practitioners ($\chi^2 = 7.39$, *df* 2, $p = .025$). Although beliefs about the harmful effects of concurrently using NRT and cigarettes were not related to the characteristics of the managers or their jobs (see Table 3), practitioners who reported that the use of NRT for SR was harmful to health or that they "didn't know" had worked for less time than those who reported that it was not harmful to health. Male respondents were more likely to report that the concurrent use of NRT and cigarettes was harmful, while those who received training at least twice a year were more likely to report that it was not harmful to health (see Table 3).

Those managers and practitioners who reported that they believed that the long-term use of NRT was harmful to health ($n = 85$) were more likely to report that this was because it could cause addiction (83%, $n = 71$), mouth/oral cancer (33%, $n = 28$), and high blood pressure (18%, $n = 15$). Eleven percent ($n = 9$) reported that it could cause nicotine overdose, 10% ($n = 8$) that it could cause a heart attack or other kind of heart disease, 2% ($n = 2$) that it could cause lung cancer, 2% ($n = 2$) another type of cancer, and 2% ($n = 2$) emphysema, chronic lung disease or COPD. In contrast, those who reported that that they believed that the concurrent use of NRT and cigarettes was harmful ($n = 160$) were most likely to report that this was because it could cause addiction (44%, $n = 71$) or nicotine overdose (73%, $n = 117$). Twenty-six percent ($n = 41$) reported that it could cause high blood pressure, 10% ($n = 16$) a heart attack, 8% ($n = 13$) oral/mouth cancer, 7% ($n = 9$) another type of heart disease, 5% ($n = 8$) lung cancer, 3% ($n = 4$) other type of cancer, and 3% ($n = 4$) emphysema, chronic lung disease or COPD. Reports did not differ among managers and practitioners ($p > .05$).

A number of other complications were also reported. For the long-term use of NRT, these included oral/dental problems ($n = 3$), increased psychological dependence ($n = 3$), mental health issues ($n = 2$), increased salt intake from lozenges ($n = 1$), stimulant effects of NRT ($n = 1$), and problems during pregnancy

Table 2. Differences in Beliefs About the Harmful Effects of Long-Term NRT Use as a Function of Personal and Job Characteristics Among Practitioners and Managers

Managers				
	Not harmful ($n = 40$)	Harmful ($n = 7$)	Do not know (0)	$t = 0.63, df\,41, p = .532$
Percentage of current role which involves managing SSSs *M* (*SD*)	82.2 (23.66)	88.3 (22.18)		$t = 1.37, df\,40, p = .179$
Number of months worked as a manager *M* (*SD*)	48.3 (38.23)	27.1 (32.00)		$t = 0.71, df\,38, p = .659$
Age *M* (*SD*)	45.2 (9.44)	43.3 (8.78)		$\chi^2 = 0.65, df\,1, p = .421$
Gender % (*n*)				$\chi^2 = 2.99, df\,1, p = .084$
Male	77.7 (9)	22.2 (9)		
Female	88.2 (30)	11.8 (4)		
Regular meetings with their commissioner % (*n*)				$\chi^2 = 0.47, df\,1, p = .492$
Yes	89.5 (34)	10.5 (4)		
No	66.7 (6)	33.3 (3)		
Good relationship with their commissioner % (*n*)				$\chi^2 = 4.75, df\,3, p = .093$
Yes	86.8 (7)	12.2 (2)		
No	77.8 (33)	22.2 (5)		
Feels that they are able to influence the commissioning process % (*n*)				$\chi^2 = 2.76, df\,3, p = .252$
Disagree	81.8 (9)	18.2 (2)		
Agree	90.6 (29)	9.4 (3)		
Unsure	50.0 (2)	50.0 (2)		
Feels involved in the strategic planning of the service % (*n*)				$\chi^2 = 2.22, df\,1, p = .136$
Disagree	77.8 (7)	22.2 (2)		
Agree	90.6 (29)	9.4 (3)		
Unsure	66.7 (4)	33.3 (2)		
Length of NRT use in the SSS they manage				
<12 months	75.0 (30)	25.0 (7)		
>13 months	100 (10)	0 (0)		
Practitioners				
Personal/job characteristic	Not harmful ($n = 335$)	Harmful ($n = 78$)	Do not know ($n = 43$)	
Age *M* (*SD*)	44.0 (10.65)	43.5 (9.97)	45.0 (11.76)	$F = 0.29, df\,2, p = .751$
Gender % (*n*)				$\chi^2 = 1.90, df\,2\ p = .386$
Male	74.3 (52)	12.9 (9)	12.9 (9)	
Female	73.0 (262)	18.1 (65)	8.9 (32)	
Months in role *M* (*SD*)	64.1 (48.99)	48.4 (44.2)	36.6 (32.96)	$F = 8.34, df\,2, p = .001$*
Practitioners' main role % (*n*)				$\chi^2 = 3.7, df\,2, p = .154$
Yes	76.4 (214)	15.0 (42)	8.6 (24)	
No	67.7 (90)	21.8 (29)	10.5 (14)	
Approach to gradual versus abrupt cessation % (*n*)				
Encourage abrupt	77.3 (140)	12.7 (23)	9.9 (18)	$\chi^2 = 7.67, df\,4, p = .104$
Encourage abrupt but allow gradual	72.5 (166)	19.7 (45)	7.9 (18)	
Encourage gradual	52.9 (9)	29.4 (5)	17.6 (3)	
Number of days training *M* (*SD*)	4.1 (5.01)	5.4 (22.8)	2.7 (1.67)	$F = 0.89, df\,2, p = .410$
When receive update to training % (*n*)				$\chi^2 = 2.01, df\,4, p = .734$
Once a year	77.0 (144)	18.2 (27)	4.7 (7)	
Twice a year	72.4 (63)	19.5 (17)	8.0 (7)	
Less than once every 2 years	74.6 (97)	16.9 (22)	8.5 (11)	

Note. Percentages given are within "Personal/job characteristic." SSS = stop smoking service; NRT = nicotine replacement therapy.
Significant difference among groups: *$p < .001$.

Table 3. Differences in Beliefs About the Use of NRT for Smoking Reduction as a Function of Personal and Job Characteristics Among Practitioners and Managers

Managers				
	Not harmful ($n = 37$)	Harmful ($n = 9$)	Do not know (0)	
Percentage of current role which involves managing SSSs *M* (*SD*)	82.7 (23.7)	85.6 (20.9)		$t = -0.32, df\,41, p = .749$
Number of months worked as a manager *M* (*SD*)	47.4 (37.76)	34.8 (38.15)		$t = -0.92, df\,40, p = .366$
Age	45.4 (9.58)	42.43 (7.70)		$t = 0.77, df\,38, p = .444$
Gender				$\chi^2 = 0.30, df\,1, p = .587$
Male	77.8 (7)	22.2 (2)		
Female	85.3 (29)	14.7 (5)		
Regular meetings with their commissioner % (*n*)				$\chi^2 = 0.18, df\,1, p = .670$
Yes	81.6 (31)	18.4 (7)		
No	75.0 (6)	25.0 (2)		
Good relationship with their commissioner % (*n*)				$\chi^2 = 0.31, df\,1, p = .579$
Yes	78.9 (30)	21.1 (8)		
No	87.5 (7)	12.5 (1)		
Feels that they are able to influence the commissioning process % (*n*)				$\chi^2 = 1.02, df\,1, p = .600$
Disagree	90.9 (10)	9.1 (1)		
Agree	77.4 (24)	22.6 (7)		
Unsure	75.0 (3)	25.0 (1)		
Feels involved in the strategic planning of the service % (*n*)				$\chi^2 = 5.72, df\,1, p = .057$
Disagree	100 (9)	0 (0)		
Agree	80.6 (25)	19.4 (6)		
Unsure	50.0 (3)	50.0 (3)		
Length of NRT use in the SSS they manage				$\chi^2 = 0.74, df\,1, p = .390$
<12 months	77.8 (28)	22.2 (8)		
>13 months	90.0 (9)	10.0 (1)		
Practitioners				
	Not harmful ($n = 272$)	Harmful ($n = 151$)	Do not know (22)	
Age *M* (*SD*)	44.3 (10.80)	43.1 (10.26)	43.6 (12.67)	$F = 0.59, df\,2, p = .558$
Gender % (*n*)				$\chi^2 = 6.30, df\,2, p = .043$*
Male	50.7 (36)	39.4 (28)	9.9 (7)	
Female	63.2 (220)	32.8 (114)	4.0 (14)	
Months in role *M* (*SD*)	62.0 (49.97)	52.6 (43.45)	42.9 (36.22)	$F = 2.89, df\,2, p = .051$*
Practitioners' main role % (*n*)				$\chi^2 = 4.24, df\,2, p = .120$
Yes	64.3 (175)	32.4 (88)	3.3 (9)	
No	55.7 (73)	37.4 (49)	6.9 (9)	
Approach to gradual versus abrupt cessation % (*n*)				$\chi^2 = 2.88, df\,4, p = .578$
Encourage abrupt	60.1 (104)	36.4 (63)	3.5 (6)	
Encourage abrupt but allow gradual	63.7 (144)	31.4 (71)	4.9 (11)	
Encourage gradual	55.6 (10)	44.4 (8)	0 (0)	
Number of days training *M* (*SD*)	4.3 (12.82)	3.8 (5.35)	5.5 (7.26)	$F = 0.25, df\,2, p = .776$
When receive update to training % (*n*)				$\chi^2 = 9.86, df\,4, p = .043$*
Once a year	59.6 (87)	39.0 (57)	1.4 (2)	
Twice a year	70.2 (59)	27.4 (23)	2.4 (2)	
Less than once every 2 years	58.1 (75)	34.9 (45)	7.0 (9)	

Note. Percentages given are within "personal/job characteristic." SSS = stop smoking service; NRT = nicotine replacement therapy.
Significant difference among groups: *$p < .05$.

Table 4. Differences in Beliefs About Whether the Use of NRT for Smoking Reduction (SR) Undermines or Promotes Smoking Cessation as a Function of Personal and Job Characteristics Among Practitioners and Managers

Managers					
	Promote ($n = 29$)	Hinder ($n = 11$)	No effect ($n = 4$)	Do not know ($n = 2$)	
Percentage of current role which involves managing SSSs *M* (*SD*)	87.22 (18.47)	86.40 (21.27)	88.33 (10.41)	37.50 (17.68)	$F = 4.42$, df 3, $p = .009$*
Number of months worked as a manager *M* (*SD*)	51.6 (40.69)	38.2 (30.93)	33.3 (32.15)	30.3 (42.43)	$F = 0.57$, df 3, $p = .640$
Age *M* (*SD*)	44.2 (9.87)	44.7 (7.99)	44.0 (13.45)	53.0 (8.49)	$F = 0.52$, df 3, $p = .670$
Gender % (*n*)					$\chi^2 = 2.56$, df 3,
Female	62.5 (20)	21.9 (7)	9.4 (3)	6.3 (2)	$p = .471$
Male	60 (6)	40 (4)	0 (0)	0 (0)	
Regular meetings with their commissioner % (*n*)					$\chi^2 = 6.62$, df 3, $p = .085$
No	25.0 (2)	50.0 (4)	12.6 (1)	12.5 (1)	
Yes	71.1 (27)	18.4 (7)	7.9 (3)	2.6 (1)	
Good relationship with their commissioner % (*n*)					$\chi^2 = 8.46$, df 3, $p = .037$*
No	22.2 (2)	44.4 (4)	22.2 (2)	11.1 (1)	
Yes	73.0 (27)	18.9 (7)	5.4 (2)	2.7 (1)	
Feels that they are able to influence the commissioning process % (*n*)					$\chi^2 = 15.19$, df 6, $p = .019$*
Disagree	39.0 (3)	40.0 (4)	30.0 (3)	0 (0)	
Agree	75.0 (24)	18.8 (6)	3.1 (1)	3.1 (1)	
Unsure	50.0 (2)	25.0 (1)	0 (0)	25.0 (1)	
Feels involved in the strategic planning of the service % (*n*)					$\chi^2 = 10.87$, df 6 $p = .099$
Disagree	25.0 (2)	37.5 (3)	25.0 (2)	12.5 (1)	
Agree	75.8 (25)	18.2 (6)	3.0 (1)	3.0 (1)	
Unsure	64.0 (2)	40.0 (2)	20.0 (1)	0 (0)	
Length of NRT use in the SSS they manage					$\chi^2 = 2.30$ df 3, $p = .526$
<12 months	61.1 (22)	25.0 (9)	11.1 (4)	2.8 (1)	
>13 months	70.0 (7)	20.0 (2)	0 (0)	10.0 (1)	
Practitioners					
	Promote ($n = 280$)	Hinder ($n = 82$)	No effect ($n = 36$)	Do not know ($n = 40$)	
Age *M* (*SD*)	44.4 (10.30)	43.8 (12.03)	42.3 (10.90)	42.0 (10.52)	$F = 0.87$, df 3, $p = .459$
Gender % (*n*)					$\chi^2 = 6.36$, df 3,
Female	63.6 (222)	17.1 (60)	9.3 (27)	10.1 (35)	$p = .095$
Male	64.3 (37)	19.2 (18)	7.1 (9)	9.4 (4)	
Months in role *M* (*SD*)	57.1 (46.31)	64.1 (57.36)	43.3 (39.93)	55.4 (40.88)	$F = 1.53$, df 3, $p = .206$
Practitioners' main role % (*n*)					$\chi^2 = 0.78$, df 3,
Yes	54.4 (171)	26.5 (51)	13.2 (19)	5.9 (25)	$p = .855$
No	64.5 (82)	17.4 (22)	7.8 (12)	10.2 (13)	
Approach to gradual versus abrupt cessation % (*n*)					$\chi^2 = 18.45$, df 6, $p = .005$*
Encourage abrupt	53.8 (93)	23.7 (41)	8.1 (14)	14.5 (25)	
Encourage abrupt but allow gradual	71.0 (157)	14.9 (33)	7.7 (17)	6.3 (14)	
Encourage gradual	77.8 (14)	11.1 (2)	11.1 (2)	0 (0)	
Number of days training *M* (*SD*)	4.2 (12.65)	3.8 (4.28)	4.8 (7.14)	3.5 (2.34)	$F = 0.13$, df 3, $p = .941$
When receive update to training % (*n*)					$\chi^2 = 5.23$, df 6, $p = .514$
Once a year	61.7 (87)	23.4 (33)	7.8 (11)	7.1 (10)	
Twice a year	72.6 (61)	15.5 (13)	6.0 (5)	6.0 (5)	
Less than once every 2 years	61.6 (77)	19.8 (25)	7.9 (10)	11.1 (14)	

Note. Percentages given are within "personal/job characteristic." SSS = stop smoking service; NRT = nicotine replacement therapy.
Significant difference among groups: *$p < .05$.

($n = 1$). For the use of NRT as an aid to SR, these included palpitations ($n = 3$), does not break the habit ($n = 1$), sickness ($n = 2$), damage to the fetus during pregnancy ($n = 4$), increased side effects ($n = 1$), increased smoking if NRT is stopped ($n = 1$), less effective ($n = 1$), lowers the likelihood of quitting ($n = 3$), and mental health problems ($n = 1$).

Overall, 57.0% ($n = 309$) of the sample reported that the use of NRT for SR would promote cessation (50.0% [$n = 29$] of managers and 57.9% [$n = 280$] of practitioners). Seventeen percent ($n = 93$) reported that they believed it would hinder cessation (19.0% [$n = 11$] of managers and 16.9% [$n = 82$] of practitioners), while 7.4% ($n = 40$) that it would have no effect (6.9% [$n = 4$] of managers and 7.4% [$n = 36$] of practitioners). Eight percent ($n = 42$) reported that they did not know (3.4% [$n = 2$] of managers and 8.3% [$n = 40$] of practitioners). No significant difference in responses was found between managers and practitioners ($\chi^2 = 1.70$, df 3, $p = .637$).

Table 4 shows that managers who reported a good relationship with their commissioner and felt that they could influence the commissioning process were more likely to report that the use of NRT for SR would promote cessation. Practitioners who reported that they only advised abrupt cessation were more likely to believe that the use of NRT for SR hindered smoking cessation.

Discussion

Sixteen percent and 33% of practitioners and managers, respectively, believed that the long-term use of NRT and the concurrent use of NRT and cigarettes were harmful to health. Seventeen percent of the sample also reported that the use of NRT for SR may hinder smoking cessation. The most commonly reported potential harms of the long-term use of NRT and concurrent use of NRT and cigarettes were addiction, overdose, and mouth cancer. Reports differed as a function of managers' relationship with their commissioner and influence on the commissioning process, while reports among practitioners differed as a function of the length of time they had been working for, gender, and frequency of update training. Practitioners who believed that the use of NRT for SR may hinder cessation were less likely to advise reduction as a treatment option.

In line with previous research, a significant number of practitioners and managers were concerned about the effect of using NRT for a year or more, the implications of using NRT concurrently whilst smoking, and believed that the use of NRT for SR may undermine cessation (Martin et al., 2004; Warner & Martin, 2003). This is despite research reporting that the use of NRT concurrently with cigarettes does not appear to be a risk factor for cardiovascular disease, respiratory disease, cancer, or mortality and may actually, with appropriate support, lead to a reduction in toxin intake (Benowitz, 1998; Fagerström & Hughes, 2002; Moore et al., 2009). Addiction and overdose are also unlikely; previous clinical trials and studies on those spontaneously reducing with NRT have failed to find any increase in biological measures of nicotine intake (i.e., cotinine; Beard, Fidler, & West, in press; Moore et al., 2009). There is also an extensive and growing body of evidence that the use of NRT for harm reduction may actually increase the propensity of smokers to quit (Beard et al., 2011; Moore et al., 2009).

These misperceptions need to be addressed if managers and practitioners are to be adequately engaged in extending treatment to involve use of NRT for harm reduction. If smokers who are unwilling or unable to quit are informed that alternative treatment options to abrupt cessation have adverse health implications, they may be inclined to continue with their current smoking patterns. The present findings demonstrate that a concern that use of NRT for SR might undermine smoking cessation among practitioners was associated with discouragement against adopting gradual reduction. Previous studies have also reported that many of those working in tobacco control are hesitant about recommending NRT for SR and that health care professionals often feel that their role is not to deal with smokers who may be interested in using NRT in this way (Nagel, Schofield, & Reman, 1999; Warner & Martin, 2003). It is perhaps surprising that beliefs about the harmful effects of using NRT in the longer term and for SR did not influence whether reduction or cessation were recommended. This is likely to reflect the fact that variables other than individuals' beliefs influence guideline implementation including the following: (a) knowledge; (b) skills; (c) social/professional role and identity; (d) beliefs about capabilities; (e) beliefs about consequences; (f) motivation and goals; (g) memory, attention, and decision process; (h) environmental context and resources; (i) social influences; (j) emotion; (k) behavioral regulation; and (l) the nature of the behavior (Michie et al., 2005). This may also explain why a significant number of those who believed that the use of NRT for SR may actually increase smokers' propensity to quit failed to recommend gradual approaches in clinic.

The question that arises is how to counteract these misperceptions. The current findings point toward the possibility of increasing the amount of on-job training received by practitioners prior to and after qualification and ensuring that managers have a good relationship with their commissioner and feel that they are able to influence the commissioning process. There is some support for this; nurses trained in smoking cessation engage in more activity relating to smoking cessation, have more positive attitudes, and are more knowledgeable about smoking cessation treatment (McEwen & West, 2001). Good relationships with colleagues and involvement in the organizational process are also related to job performance (Babin & Boles, 1996). However, as a consequence of the historical bombardment of managers and practitioners with the idea that only abrupt cessation options should be offered to clients, this is unlikely to be a straightforward process. According to the Health Belief model, these core ingrained views will only change if a multidimensional approach is taken, emphasizing the benefits of harm reduction over its potential costs, providing cues to action in the form of educational documents, and ensuring that health care professionals are aware that there are many smokers whom without this approach may never quit smoking (Rosenstock, 1974). Repeating statements and the use of multiple formats may increase familiarity and judgment of validity (Arkes, Boehm, & Xu, 1991). Even if information overload is achieved, according to the elaboration-likelihood model (Petty & Cacioppo, 1986), practitioners will also need to be motivated and able to process the message that NRT should be offered to smokers as a means to reduce their cigarette consumption if they are unable or unwilling to quit smoking. This can be achieved by a number of means: ensuring the messages' self-relevance (Burnkrant & Unnava, 1989), credibility, and comprehensibility

(Ratneshwar & Chaiken, 1991), as well as providing information from in-group members which is positively as opposed to negatively framed, that is, describing the benefits smokers will gain from using NRT for SR as opposed to the benefits they will lose (Maheswaran & Meyers-Levy, 1990; Wilder, 1990).

The study had a number of limitations. First, as the response rate was relatively low among managers, it is possible that the sample attained is not representative of managers generally. The same may also apply to practitioners. Nevertheless, a significant degree of misunderstanding was evident, and it is unlikely that this is overestimated by the present sample. Second, no objective data were available on respondents' clinical practice. It will be important in future to examine how far beliefs and attitudes such as those measured in this study translate into the treatment offered by practitioners and clinical outcomes. Third, as the survey was designed to collect data on a wide range of topics and not just knowledge about SR and the use of NRT for this purpose, a number of important questions could not be answered. For instance, it would be useful to determine whether beliefs differ among rural areas and cities and as a function of whether or not managers and practitioners had been provided with information on tobacco harm reduction issues during training. Fourth, although the survey questions were piloted among researchers working in the area of tobacco control, there is a concern that they may not have been interpreted as intended by respondents. However, it is difficult to envisage how differences in interpretation may have affected the findings reported. Finally, the current study was based on English SSSs. It is quite likely that the findings may not apply to other countries that perhaps have less liberal regulatory systems regarding the use of NRT for harm reduction purposes. This would be a useful area for future research.

Conclusion

A significant minority of managers and practitioners believe that the use of NRT for SR is harmful to health and may undermine smoking cessation. Educational programs are required to increase awareness and to ensure that managers and practitioners provide accurate information and capitalize on the medical encounter with smokers, many of which may be unable or unwilling to quit smoking. Improving relationships with colleagues and more extensive training may go some way in accomplishing this goal.

Declaration of Interests

EB has received conference funding from Pfizer. Robert undertakes research and consultancy and receives fees for speaking from companies that develop and manufacture smoking cessation medications. He also has a share of a patent for a novel nicotine delivery device. MMcD has no competing interests. AMcE receives a personal income from Cancer Research, UK, via University College London. He has received travel funding, honorariums, and consultancy payments from manufacturers of smoking cessation products (Pfizer, J&J, McNeil, GSK, Nabi, Novartis, and Sanofi-Aventis). He also receives payment for providing training to smoking cessation specialists; receives royalties from books on smoking cessation; and has a share in a patent of a nicotine delivery device.

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