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Factors influencing Dutch practice nurses' intention to adopt a new smoking cessation intervention

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Conflict of interest

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ABSTRACT

Aims. This paper is a report of a study that aimed to identify factors influencing practice nurses' and nurse practitioners' intention to adopt a new smoking cessation intervention.

Background. Although effective smoking cessation interventions exist and practice nurses can offer a considerable resource in advertising patients to quit smoking, due to several reasons the majority of practice nurses does not implement these interventions.

Methods. A cross-sectional study was undertaken among Dutch practice nurses and nurse practitioners working in general practices (n = 139) using electronic questionnaires. Data was collected from January until March in 2009. T-tests were used to compare adopters with non-adopters regarding their predisposing and motivational factors. Logistic regression analyses were conducted to assess the variation in intention explained by these factors.

Results. The majority of practice nurses did not intend to adopt the new intervention (n = 85; 61.2%). More practice nurses than nurse practitioners intended to adopt the intervention. Attitude and perceived social norms were found to be positively correlated with the intention to adopt the intervention whereas satisfaction with current smoking cessation activities was found to be negatively correlated.

Conclusion. Important associations were found between profession, attitude, social norms and satisfaction, and the intention to adopt the new smoking cessation intervention. Practice nurses who do not intend to adopt need to be persuaded of the advantages of adopting. Perceived social norms need to be restructured and before presenting the intervention to a general practice current smoking cessation activities should be determined to increase the intervention's compatibility with these current practices.

SUMMARY STATEMENT

What is already known about this topic

- Practice nurses can offer a considerable resource in advising patients to quit smoking.
- Although effective smoking cessation interventions exist, the majority of practice nurses do not carry out these interventions.
- Known reasons for not implementing smoking cessation interventions are negative beliefs about these interventions such as the belief that the intervention is not effective, consumes too much time, interferes with the health care professional-patient relationship, a lack of finances and a lack of social support.

What this paper adds

- Potential adopters of a new smoking cessation intervention can be characterized as having a more positive attitude towards the program, as well as experiencing higher social support concerning the adoption of the intervention and also being less satisfied with their current smoking cessation activities.
- Self-efficacy was not found to have an influence on the intention to adopt a new smoking cessation program.
- The effect of satisfaction with current smoking cessation activities on the intention to adopt a new smoking cessation program seemed to be mediated by attitude.

Implications for practice

- Practice nurses with negative beliefs need to be persuaded of the advantages of adopting a new smoking cessation intervention, while social networks and perceived social norms should be recognized and addressed when promoting the adoption of the intervention.

- Before presenting a smoking cessation intervention to a general practice, current smoking cessation activities should be determined to increase the program's compatibility with these current practices.
- Further longitudinal research is needed to examine the role of satisfaction with current smoking cessation activities within the context of the I-Change model.

Keywords: smoking cessation; primary care; practice nurse; adoption; intention; satisfaction

INTRODUCTION

Tobacco use is regarded as the most preventable cause of premature death in the world (WHO, 2008). Each year 5.4 million people die from the consequences of smoking, nevertheless, more than one billion people in the world continue using tobacco (WHO, 2008).

Although it is the individual smoker's decision to keep smoking or to quit, health care professionals can help and guide patients with an attempt to quit (Chavannes et al., 2007). In general, it appears to be effective if health care professionals, such as general practitioners and practice nurses, advise patients to stop smoking (Needleman et al., 2006, Van Weel et al., 2005), even brief behavioural counselling is effective in improving healthy behaviour (Fiore et al., 2000, Lancaster and Stead, 2005, Steptoe et al., 1999). In the Netherlands the profession of practice nurses was introduced in 2001 as a new health care profession aimed at relieving GPs by taking over tasks such as providing care for the chronically ill (Derckx, 2006). Due to a positive nurse-patient relationship (Shum et al., 2000, Van Son et al., 2004) and to the large number of patients with smoking-related illnesses visiting general practices each year (Van den Berg, 2003), practice nurses can offer a considerable resource in advising patients how to quit smoking.

Background

Although effective smoking cessation interventions exist (Fiore et al., 2000, Pieterse et al., 2001, Van den Bruel et al., 2004, Van Weel et al., 2005, Lancaster and Stead, 2005), the majority of practice nurses do not carry out these interventions (Chavannes et al., 2007, Eccles et al., 2007, Glasgow et al., 2003, Segaar et al., 2007). Reasons for not implementing smoking cessation interventions in the general practice are negative beliefs about smoking cessation interventions such as the belief that the intervention is not effective (Hall and Marteau, 2007, Hall et al., 2005), consumes too much time (Hall et al., 2005) or interferes

with the health care professional-patient relationship (Chavannes et al., 2007, Coleman et al., 2001). Another group of impeding factors are structural and practical barriers, including lack of time (Hall and Marteau, 2007, Nagelhout, 2007), lack of finances (Needleman et al., 2006) and lack of social support (Nagelhout, 2007).

In the present study, the I-Change Model (De Vries et al., 2003) was used as a theoretical framework to assess the determinants of the intention to adopt a new smoking cessation intervention. This intervention (PAS, or Personal Advice in Stopping smoking) combines a web-based multiple computer tailored smoking cessation programme with a tailored counselling session with a practice nurse (Smit et al., 2010). According to the I-Change model, the intention to adopt PAS is determined by practice nurses' attitude, their perceived social influence and their self-efficacy. A positive attitude towards smoking cessation interventions in general and towards PAS in particular, is hypothesized to have an positive influence on the intention to adopt PAS. Similarly, when the social environment is perceived as positive towards the adoption of PAS and, furthermore, when practice nurses feel confident (i.e. have a high self-efficacy) to adopt PAS in their general practice, the intention to adopt PAS will increase. These three motivational factors, in turn, are predicted by several predisposing factors, such as awareness of PAS' existence and practice nurses' knowledge about the content of PAS.

Besides these well-investigated factors influencing the adoption of smoking cessation programmes, there is another possible determinant. Past research has reported much about patients' satisfaction regarding consultations with practice nurses; compliance rises if the patient is satisfied with the consultation (Derckx, 2006, Shum et al., 2000, Van Son et al., 2004). There is, however, a shortage of research about practice nurses' satisfaction with the current smoking cessation activities that they are involved in. Practice nurses' dissatisfaction with their current situation might improve the chance of adoption of new smoking cessation interventions. Supported by other adoption studies investigating the determinants of adopting

a smoking cessation intervention by health care professionals (Bolman et al., 2002, Hall et al., 2005) and the assumptions of the I-Change model, it can be expected that a practice nurse's high dissatisfaction with current smoking cessation activities is related to a more positive attitude towards PAS and a higher intention to adopt PAS.

THE STUDY

Aim

In this study, we aimed to provide insight into which theoretical concepts determined practice nurses' intention to use PAS in their practice.

Design

A cross-sectional study was carried out.

Sample/Participants

Practice nurses and nurse practitioners working in Dutch general practices were asked to participate in the study. In the Netherlands, practice nurses have an intermediate level of vocational education and most often provide care for patients with chronic diseases such as diabetes, asthma, or hypertension (Nederlands Huisartsen Genootschap and Landelijke Huisartsen Vereniging, 2011). Nurse practitioners have a higher vocational educational level and usually have more responsibilities, e.g. preventive care and care for elderly patients (Nederlands Huisartsen Genootschap and Landelijke Huisartsen Vereniging, 2011). Recruitment was conducted through thirteen organizations for practice nurses and/or general practitioners, altogether having a potential reach of at least 1800 practice nurses and over 18.000 general practitioners. According to the organizations' preferences, a recruitment letter was sent to their members through their website, (electronic) newsletter or personal e-mail

correspondence. In addition, members of the research team personally approached practice nurses with previous interest in PAS, a PAS website was developed and a Dutch social networking website that includes groups of practice nurses agreed to send a recruitment letter to all its members. After agreeing to participate, all practice nurses were asked to fill out an online questionnaire. Because of the open source character of the questionnaire it was not possible to detect the questionnaire's response rate, but in total 239 questionnaires were returned. This is compared to the 138 that would have already been sufficient to detect a .5 difference between adopters and non-adopters with regard to their score on the main outcome measure, i.e. their intention to adopt PAS (DSS Research).

Data collection

Data was collected from January until March in 2009. The electronic questionnaire consisted of 67 questions regarding demographic characteristics, satisfaction, attitude, social influence, self-efficacy, and intention. Based on a pilot test, it was estimated that completing the questionnaire would last 15 minutes. At the start of the online questionnaire, respondents were asked to indicate their profession; respondents who were not practice nurses or nurse practitioners were excluded.

Ethical considerations

PAS was approved by the Medical Ethics Committee of Maastricht University and the University Hospital Maastricht (MEC 08-3-037; NL22692.068.08), and is registered with the Dutch Trial Register (NTR1351).

Data analysis

The analyses were conducted with SPSS version 15.0. Effects were considered significant when $p<.05$. Totally, the questionnaire consisted of 67 questions.

First, a missing value analysis was conducted; respondents who had more than 20% missing values were excluded from further analyses.

Respondents were divided in two groups based on their intention to adopt PAS ("Does your general practice intend to participate in the study?"); non-adopters (no, probably not or maybe) and adopters (most probably and yes). T-tests were conducted to evaluate differences between adopters and non-adopters on demographics, the three motivational factors attitude, social influence and self-efficacy and satisfaction with current smoking cessation activities.

Logistic regression analysis using the enter method was used to assess which determinants could, in combination, best explain the practice nurses' intention to adopt PAS. Four blocks were included. The first block consisted of demographic variables to determine which demographics significantly explained the intention to adopt PAS. In the second block, satisfaction was entered in order to examine whether or not this variable could explain the variance in intention to adopt PAS. The third block consisted of demographics, satisfaction and the three intrapersonal determinants; attitude, social influence and self-efficacy. In order to assess whether satisfaction might moderate the relationship between attitude and intention, an interaction term was added in the fourth block.

Validity and reliability

Demographics were measured by 14 items. With regard to the general practice these variables included location, practice setting (rural, semi-urban or urban), total amount of registered patients and total number of GPs, practice nurses and assistants working in the general practice. Additional individual characteristics assessed were workload, years of experience working as a practice nurse, years working in the current general practice, age, gender, smoking status (non-smoker or smoker) and years of experience in giving smoking cessation advice.

Respondents were also asked about their satisfaction with current smoking cessation activities. This was measured by four questions ranging from 1 (totally disagree) to 5 (totally agree), which together formed one factor ($\alpha = 0.86$).

Attitude was measured by 12 questions using a five-point Likert scale ranging from 1 (totally disagree) to 5 (totally agree). Factor analyses and reliability analyses revealed two subscales. The first subscale, attitude towards smoking cessation interventions in general ($\alpha = 0.96$), consisted of three questions. The second subscale measured the attitude towards PAS ($\alpha = 0.86$) and consisted of nine questions.

In order to assess the social influence perceived by practice nurses related to smoking cessation interventions, seven questions were included. Based on factor analyses and past research these questions were divided into subscales consisting of three items measuring social influence with regard to smoking cessation interventions in general ($\alpha = 0.89$), two items on existing social norms with regard to PAS ($\alpha = 0.82$) and two items assessing social support with regard to PAS ($\alpha = 0.60$). Questions measuring the social influence with regard to smoking cessation interventions and social support with regard to PAS were coded from 1 (totally disagree) up to 5 (totally agree). Questions regarding existing social norms concerning PAS ranged from 1 (totally negative) up to 5 (totally positive).

Self-efficacy concerning PAS was evaluated by three questions, which formed one factor ($\alpha = 0.68$) and were ranged from 1 (very unlikely) to 5 (very likely).

One question measured the practice nurses' intention to participate in the research project regarding the effect of PAS. This dependent variable was assessed on a five-point scale (1 = no, 2 = probably not, 3 = maybe, 4 = most probably, 5 = yes).

Table 1 provides an overview of the concepts measured and provides some examples of the questions included in the questionnaire to measure these concepts. In addition, a description is provided of the (sub)scales formed, together with their relative reliability.

RESULTS

Characteristics of the sample

Due to a high number of missing values (> 20%) 81 out of 239 questionnaires were not appropriate to use for further analyses and were thus excluded. Another 17 questionnaires were filled out by other professions than practice nurses or nurse practitioners and were also excluded. Two questionnaires missed an answer to the item regarding the intention to adopt PAS and were excluded from the analyses as well. In total, 100 questionnaires were excluded from further analyses, resulting in a final sample of 139 practice nurses.

Characteristics of the final sample (n=139), also divided in potential adopters (n=54) and non-adopters (n=85), are presented in table 2. The majority of respondents were female (97.1%) practice nurses with an average age of 44 years (SD=8.18). The mean working experience as a practice nurse or nurse practitioner was four years (SD=2.89) and experience in giving smoking cessation advice three years (SD=2.61). Most of the practice nurses were non-smokers (49.6%) or ex-smokers (48.9%). Respondents reported working in the current general practice for an average of six years (SD=5.92) with an average of 21 hours per week

(SD=7.31). The average general practice included four GPs, one practice nurse and five assistants and included over 4500 registered patients.

Differences between adopters and non-adopters

There was a significant relationship ($p<.05$) between the function in the general practice and whether or not respondents intended to adopt PAS. More practice nurses (40,5%) than nurse practitioners (14,3%) indicated to intend to adopt PAS.

Differences regarding demographics, attitudes, social influence, self-efficacy and satisfaction are presented in table 2. Adopters presented a significantly more positive attitude and perceived social influence, including social norms and social support, towards PAS than non-adopters. Furthermore, adopters reported significantly less satisfaction with regard to current smoking cessation activities they were involved in than non-adopters.

No significant differences between potential adopters and non-adopters were observed for demographics regarding the general practice and individual characteristics, attitude and social influence towards smoking cessation interventions in general and self-efficacy towards PAS.

Explanation of intention towards the adoption of PAS

The final model of the logistic regression explained 56.2% of the variance in intention to adopt PAS. Attitude and social norms towards PAS showed to be of significant positive influence in determining the respondent's intention to adopt PAS. In relation to the earlier models the significance of profession and satisfaction disappeared after adding the concepts of attitude, social influence and self-efficacy. In fact, the relation between profession respectively satisfaction and the intention towards the adoption of PAS was mediated by these motivational factors. No significant results were found for attitude and social influence towards smoking cessation interventions in general, social support towards PAS and self-

efficacy. An interaction between attitude towards PAS and satisfaction with current smoking cessation activities did not significantly determine intention to adopt (OR=6.81; 95% CI=0.93-49.83). Specific information about the logistic regression analysis is shown in table 3.

DISCUSSION

Study limitations

This study is subject to some limitations. That is, this study had a cross-sectional design, implying that there was only one measurement per respondent at one point in time (Bouter et al., 2005). Consequently, it was impossible to reach a conclusion about causality and this study needs to be followed up by longitudinal studies. Because of the open character of the online questionnaire, response rates could not be defined and characteristics of non-responders could not be assessed. Furthermore, the study was conducted amongst Dutch practice nurses and nurse practitioners, investigating their intention to adopt an intervention developed and yet available in the Netherlands only. Therefore, some caution is warranted when generalizing the findings from our study to other professions or to practice nurses and nurse practitioners working in other countries. Lastly, when dichotomous categories were made for the intention to adopt PAS, the category non-adopters consisted of respondents with no intention to adopt PAS and of respondents who were possibly intending to adopt PAS (i.e. who answered maybe when asked whether they intended to adopt PAS), resulting in a relatively heterogeneous group of people. Although the main objective of the present study was to study the determinants of the intention to adopt PAS, and not of the possible intention to adopt PAS, it could be argued that the group of practice nurses who were possibly intending to adopt PAS could differ from non-adopters (Hoving et al., 2006). However, our

study did not have a sufficient number of respondents to adequately assess the potential differences between non-adopters and those possibly intended to adopt.

Discussion of results

The present study provides important results concerning the association between the intention to adopt the new smoking cessation intervention PAS and its possible determinants. The most important findings were that attitude and social norms towards PAS were positively related to the intention to adopt PAS and that satisfaction with current smoking cessation activities was negatively relation to the intention to adopt. No relation was found with self-efficacy. Profession was the only demographic characteristic influencing the intention to adopt PAS; more practice nurses than nurse practitioners intended to do so.

A minority of the participating practice nurses and nurse practitioners (39%) reported that they were intending to adopt PAS in the future. Although other studies reported more willingness among general practice staff to adopt a smoking cessation intervention (Applegate et al., 2007, Nagelhout, 2007), these focused on a sample which also included GPs or specialists. It is possible that GPs and specialists show a higher intention to adopt the smoking cessation interventions studied, but then delegated the execution to their staff, including assistants, practice nurses or nurse practitioners. The results found here might therefore be more realistic regarding the feasibility of implementing PAS in Dutch general practice.

The current study used a theoretical framework (the I-Change model) which also functioned as a basis for previous studies regarding the adoption of lifestyle change interventions in Dutch general practices (De Vries et al., 2003, de Vries and Mudde, 1998, Lee, 2004, Nagelhout, 2007). The model seemed to be valid in predicting the intention to adopt a new smoking cessation intervention among Dutch practice nurses as well. Results concerning the main concepts from the I-Change model that were studied, i.e. attitude, social influence and self-efficacy, are described in detail below.

Attitude towards PAS

Attitude towards PAS was positively related to PAS' rate of adoption. Previous studies confirmed that a positive view on the smoking cessation intervention determines its rate of adoption among general practice staff (Applegate et al., 2007, Clark et al., 2008, Heyes et al., 2004, Kaner et al., 2007, McEwen and West, 2001, Nagelhout, 2007, Sinclair et al., 2008).

Self-efficacy to adopt PAS

Contrary to other adoption studies (Applegate et al., 2007, Nagelhout, 2007, Sinclair et al., 2008, Wetta-Hall et al., 2005), self-efficacy seemed to have no influence on the intention to adopt PAS. It should be recognised that self-efficacy was only measured with three items. It is possible that the results of this study were different, if there were more items for self-efficacy. Nevertheless, most of the respondents felt confident talking with patients about smoking cessation and persuading them to stop smoking. A possible reason for not finding a significant effect of self-efficacy could be that PAS was developed based on the needs of practice nurses and that PAS' requirements on practice nurses are not demanding (Smit et al., 2010). Therefore, ideally practice nurses should feel confident in adopting PAS and, as a result, the total sample's scores on self-efficacy were expected to be high.

Perceived social influence to adopt PAS

Although differences between adopters and non-adopters were found in perceived social norms and social support, only social norms seemed to explain the intention to adopt PAS when other determinants were included in the analysis. Other studies also indicated that important others, such as patients and colleagues, play a crucial role in the adoption process of smoking cessation interventions (Coleman et al., 2001, Hall and Marteau, 2007, Kaner et al., 2007, Nagelhout, 2007, Sinclair et al., 2008). One possible explanation for the non-

significance of social support is linked to the high practice nurses' self-efficacy regarding the adoption of PAS. If practice nurses feel confident with the adoption of PAS, their colleagues' social support might not be needed. Moreover, in comparison to social support, norms are a more indirect kind of social influence, as they are perceived by persons, but do not automatically reflect the truth (Brug et al., 2008). It is possible that negative social norms ("My colleague's attitude towards PAS is totally negatively") were perceived by the practice nurses, although the colleagues might have thought positively about PAS. This means that a discrepancy between perceived social norms and the real opinion of their colleagues may have existed.

Satisfaction with current smoking cessation activities and the intention to adopt PAS

If practice nurses and nurse practitioners were dissatisfied with their involvement in and the quality of current smoking cessation activities, they were more likely to intend to adopt PAS than if they were satisfied. Moreover, the effect of satisfaction with current smoking cessation activities seemed to be mediated by attitude. This finding seemed to be connected to the principles of persuasion. Rossiter et al. (1997) suggest that persuasion intention originates from different intrapersonal motives. Incomplete satisfaction is one of these motives or conditions, which people try to remove (Rossiter and Percy, 1997). Practice nurses who perceived dissatisfaction with their smoking cessation activities might therefore have been more likely to report a higher intention to adopt PAS.

Conclusion

This study has identified a number of determinants which are important in practice nurses' decisions whether or not to adopt a smoking cessation intervention. It seems that potential adopters of PAS can be characterized as having a more positive attitude towards PAS, as well

as experiencing a higher social acceptance concerning the adoption of PAS. The results presented in this paper have several implications for both practice and research.

First of all, practice nurses who did not intend to adopt PAS need to be persuaded of the advantages of adopting PAS. Therefore, a more positive attitude towards PAS should be reached, e.g. by increasing the triability of PAS and by making PAS more visible for practice nurses. This might be realized using other practice nurses or patients reporting positive experiences with PAS. Moreover, it may be necessary to reward general practices more directly if they want to adopt PAS, for example by providing them with financial incentives and study credit. To improve social norms, steps can be taken to identify key players among practice nurses and focus recruitment strategies towards them specifically.

Secondly, further research should aim to examine whether satisfaction influences intention in a direct or indirect way. In the current study, satisfaction seemed to be mediated by attitude. As this study had a cross-sectional design, longitudinal research is needed to determine whether mediation really occurs, what role satisfaction plays when added to the I-Change model and how its relations with other factors in the model are.

Thirdly, although much research has been done on hospital nurses' or GPs' attitude, social influence and self-efficacy towards smoking cessation interventions (Bolman et al., 2002, Lambert et al., 2005, Johnston et al., 2004, McCarty et al., 2001, Sarna et al., 2001, Segaar et al., 2006, Ulbright et al., 2006, Whyte et al., 2006), this is one of the first studies targeting practice nurses. As a result, further research is needed focusing on this specific target group to falsify or verify the results presented.

Lastly, before introducing PAS or similar new smoking cessation interventions into general practices it is important to assess satisfaction with current smoking cessation activities in these practices. When practice nurses are dissatisfied with current activities, new interventions can be developed adapted to practice nurses' needs with regarding to smoking cessation intervention aids.

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Conflict of interest

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Table 1 Measures of attitude, social influence, self-efficacy and satisfaction and their reliability

	Number of items	Example questions	Cronbach's α
Attitude			
towards smoking cessation interventions in general	3	"I consider smoking cessation advice to be important"	0.96
towards PAS	9	"PAS is an effective smoking cessation intervention"	0.86
Social influence			
towards smoking cessation interventions in general	3	"My colleagues consider smoking cessation advice to be important"	0.89
perceived support to adopt PAS	2	"My colleagues will stimulate the use of PAS"	0.60
perceived norms to adopt PAS	2	"What do you think is your colleague's attitude towards PAS?"	0.82
Self-efficacy			
to use PAS	3	"I can persuade my patients to stop smoking"	0.68
Satisfaction			
with current practices	4	"I am satisfied with the amount of smoking cessation advice we offer"	0.86

Table 2 Descriptives of practice nurses' demographics, their attitude, social influence and self-efficacy beliefs and satisfaction with current smoking cessation activities

	Total	Adopters (54)	Non-Adopters (85)	T	χ^2	p-value
Number (%) of practice nurses working in a … general practice					0.90	0.68
Rural	55.00 (39.6%)	22.00 (40.7%)	33.00 (38.8%)			
Semi-Urban	24.00 (17.3%)	11.00 (20.4%)	13.00 (15.3%)			
Urban	60.00 (43.2%)	21.00 (38.9%)	39.00 (45.9%)			
Mean (SD) number of						
registered patients	5,320.00 (3,252.58)	5,649.00 (3,898.26)	5,107.00 (2,759.58)	-0.94		0.35
GPs working in the practice	4.00 (2.30)	4.00 (2.71)	3.00 (2.01)	-0.99		0.33
Practice Nurses working in the practice	1.00 (1.08)	1.00 (1.23)	1.00 (0.94)	-1.42		0.16
Assistants working in the practice	5.00 (3.42)	5.00 (5.44)	4.00 (4.46)	-1.50		0.13
Number (%) of					6.21	**0.02**
Practice Nurses	85.00 (61.2%)	40.00 (74.1%)	45.00 (52.9%)			
Nurse Practitioners	54.00 (38.8%)	14.00 (25.9%)	40.00 (47.1%)			
Number (%) of					2.62	0.16
Males	4.00 (2.9%)	0.00 (0.0%)	4.00 (4.7%)			
Females	135.00 (97.1%)	54.00 (100.0%)	81.00 (95.3%)			
Number (%) of					3.89	0.21
Non-smokers	69.00 (49.6%)	23.00 (42.6%)	46.00 (54.1%)			
Ex-smokers	68.00 (48.9%)	30.00 (55.6%)	38.00 (44.7%)			
Social smokers	1.00 (0.7%)	1.00 (1.9%)	0.00 (0.0%)			
Smokers	1.00 (0.7%)	0.00 (0.0%)	1.00 (1.2%)			
Mean (SD) workload in hours/week	21.00 (7.34)	21.00 (7.77)	20.83 (7.09)	-0.13		0.90
Mean (SD) years working						
as practice nurse/nurse practitioner	4.00 (2.89)	3.94 (2.69)	4.15 (3.02)	0.42		0.67
in current general practice	6.00 (5.92)	5.55 (5.60)	5.90 (6.14)	0.34		0.74
Mean (SD) years of experience in smoking	3.00 (2.61)	2.81 (2.35)	3.20 (2.76)	0.84		0.40

cessation advice					
Mean (SD) age	44.00 (8.18)	42.81 (8.75)	44.05 (7.80)	0.86	0.39
Mean (SD) attitude score (range 1-5)					
towards smoking cessation interventions in general	4.78 (0.69)	4.69 (0.91)	4.84 (0.51)	1.12	0.27
towards PAS	3.47 (0.51)	3.81 (0.40)	3.26 (0.45)	-7.36	**<0.01**
Mean (SD) social influence score (range 1-5)					
towards smoking cessation interventions in general	4.47 (0.84)	4.46 (0.98)	4.78 (0.74)	0.15	0.88
Norms towards PAS	3.97 (0.73)	4.31 (0.70)	3.76 (0.64)	-0.71	**<0.01**
Support towards PAS	2.98 (0.49)	3.11 (0.60)	2.90 (0.38)	-2.32	**0.02**
Mean (SD) self-efficacy score (range 1-5)	3.88 (0.64)	3.99 (0.53)	3.80 (0.69)	-1.76	0.08
Mean (SD) satisfaction score (range 1-5)	3.46 (0.89)	3.24 (0.85)	3.60 (0.89)	2.36	**0.02**

Note: p-values < .05 are marked bold

Table 3 Logistic regression of determinants of intention to adopt PAS

	Odds Ratio	p-value	95% Confidence Interval	
			Lower	Upper
Block 1				
Profession	2.50	**0.04**	1.03	6.03
Block 2				
Profession	2.80	**0.03**	1.11	7.11
Satisfaction	0.51	**0.01**	0.31	0.84
Block 3				
Profession	1.69	0.42	0.48	5.94
Satisfaction	0.42	**0.04**	0.18	0.96
Attitude				
general	0.48	0.33	0.11	2.06
PAS	100.41	**0.00**	10.65	947.24
Social influence				
general	0.77	0.62	0.27	2.16
PAS norms	4.76	**0.00**	1.84	12.32
PAS support	1.10	0.91	0.22	5.58
Self-efficacy				
PAS	1.00	0.98	0.32	3.03

Note: p-values < .05 are marked bold