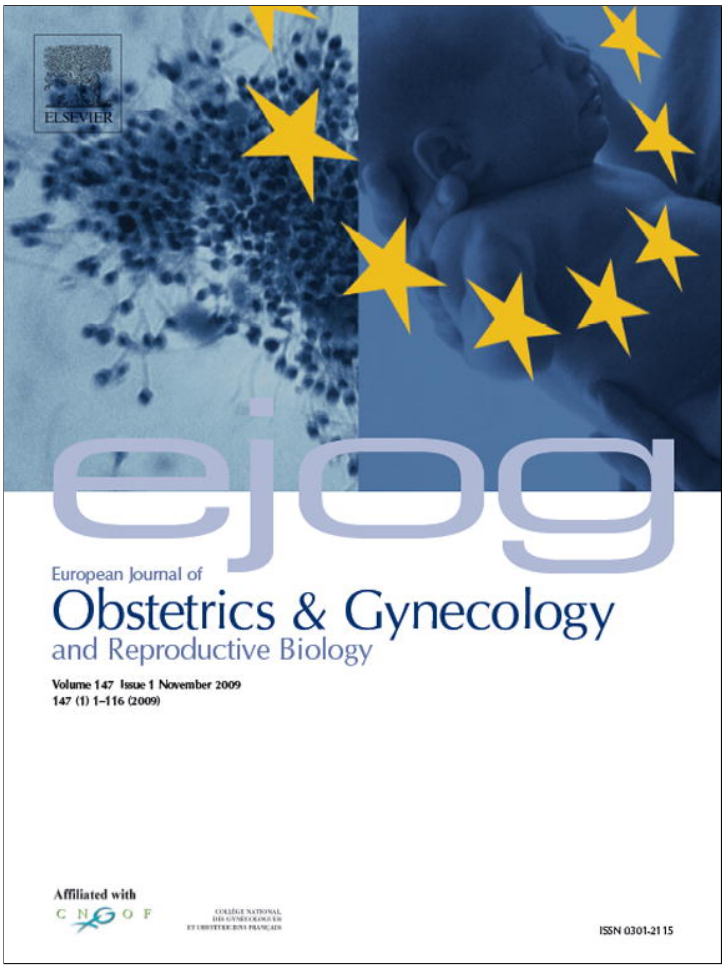

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Attitude towards cessation among French pregnant smokers: Explaining the poor uptake of specialised support

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ABSTRACT

Objectives: This study investigated pregnant smokers' profile and attitude towards cessation to explain who stops smoking during pregnancy and who is unsuccessful.
Study design: 682 pregnant smokers aged less than 50 had visited cessation services between 2004 and 2006. Pregnant smokers' profile was described using: socio-demographic details, psychological and medical history, characteristics of tobacco consumption and details of cessation interventions. At the end of the first visit, cessation specialists could record a brief report of the visit with additional information on the smoker. Abstinence was verified during follow-up visits with expired carbon monoxide measures, with a threshold of 5 ppm. Associations between pregnant smokers' profile and subsequent cessation interventions outcomes were tested using descriptive statistics. Predictors of cessation were determined with multivariate logistic regression. Reports of the visits were analysed by open coding to determine main themes.
Results: 80.5% of women were heavy smokers at baseline whatever the intervention outcome (10 cigarettes or more per day by the first visit). 16.3% ($N = 111$) of women stopped smoking during their pregnancy. 59.8% ($N = 408$) were registered during a first visit but never returned to a cessation service. The reports revealed that these women showed little motivation for complete cessation, despite being offered an intervention plan. They were more interested in maintaining a reduced tobacco consumption for stress relief. Women who lived or worked with smokers feared that they would not be able to maintain abstinence.
Conclusions: Despite being offered professional help, many pregnant heavy smokers do not feel ready to stop smoking. Their attitude towards cessation illustrates ambivalence. There is thus a need for coordinated efforts between antenatal care providers and smoking treatment specialists in order to enhance pregnant smokers' motivation to quit.

1. Introduction

Smoking during pregnancy is harmful on the pregnancy and the development of the foetus [1]. Since 2003, the French tobacco control programme has targeted this issue. Concerns included the access to cessation services [2]. 45,000–55,000 newcomers sought help in 400 services nationwide in 2003; 2.1% were pregnant [3]. In 2005, there were 4.5% of pregnant smokers in the 485 services available then (www.ofdt.fr).

Despite this improvement in the offer of services, the proportion of French pregnant smokers seems to remain high. 35% of women aged 16–45 smoked daily in 2005 and tobacco specialists estimate that 30% of pregnant women smoke [4,5]. Furthermore, the 2005 French Health Barometer reports that pregnancy is less often a trigger of successful abstinence among women than among their male partners [4].

Literature reports that smoking during pregnancy is usually associated with: young age, low socioeconomic status, strong dependence, being with a smoker [6]. Further understanding of pregnant smokers is necessary to determine how to help them quit [7]. Assessing tobacco use based on self-reports is a weakness of many studies [6]. It can lead to underreporting as women may be unwilling to admit smoking. Moreover, research has shown that simple yes/no questions may not suffice to improve disclosure of information [8,9].

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In France, recent studies on pregnant smokers at a national scale are lacking as published surveys are often based on regional samples [7,10–12].

With openly disclosed qualitative information and biochemical validation, this study addresses the topic of who stops smoking and who is unsuccessful among pregnant smokers in French smoking treatment services. Women's profile and attitudes towards cessation are investigated to explain intervention outcomes, especially when unsuccessful.

2. Material and methods

From January 2004 to March 2006, 682 pregnant smokers aged less than 50 were registered in the national smoking cessation database, covering 116 services and 20 of the 22 regions in metropolitan France. Pregnant smokers represented 3.7% of smokers registered then. During their first visit, they filled a questionnaire that was checked and registered in the on-line database by cessation specialists [13]. Data was anonymised. The National Auditing Committee on Informatics and Individual Liberty authorised the programme.

Women reported baseline socio-demographic information. Medical history, current use of psychotropic medication, history of depression and tobacco-related information were also registered. Cessation specialists used the Fagerström Test for Nicotine Dependence (FTND) [14]. The scale was categorised: zero to four for low dependence, five to six for medium dependence and seven to ten for high dependence. Carbon monoxide (CO) levels in expired air were measured. The FTND has been recommended by consensus in France for pregnant smokers [12] and is also routinely used in other countries [15,16].

As part of cessation interventions, women could be offered nicotine replacement therapy (NRT), cognitive behavioural therapy (CBT) or psychotropic medication. At each follow-up visit, CO levels were measured. In this analysis, intervention outcomes were defined as the smoking status at the last visit during pregnancy. Abstinence was established by self-report validated with a CO measure $\leq$5 parts per million (ppm) [17]. Non-quitters had either reported continued smoking or were not CO-validated quitters. The last category was that of women who did not return to a cessation service after the initial visit during which they had been routinely registered.

When entering questionnaires in the database after the first visit, cessation specialists could record, in free text, reports of the interviews with pregnant smokers. However, this was not mandatory, and although all women were registered after their first visit, there were reports about 58.0% (n = 396) of them. Based on these reports, we performed a qualitative analysis of women's attitudes towards cessation.

Reports were reviewed according to intervention outcomes. Open coding was used to determine main themes (e.g., interest in reduction, low motivation). More than one theme could be assigned to a case. Qualitative analysis was done using Sphinx software (version 5; Sphinx Plus – Lexica, France). English translations of selected illustrative quotes from the reports are presented in this paper.

Chi-square test with continuity correction or Fisher's test for small samples (under five) were used to analyse categorical variables and analysis of variance for continuous variables. With stepwise multivariate logistic regression, we tested the effect of all variables on cessation. Odds ratio (OR) and 95% confidence intervals (CI) are presented only for statistically significant variables. Two-tailed p-values $\leq$0.05 were considered statistically significant. Analysis was done using SAS software (version 8.02; SAS Institute, Cary, North Carolina, USA).

3. Results

3.1. Baseline characteristics and intervention outcomes

59.8% (n = 408) of women had not returned to a cessation service after the initial visit. 16.3% (n = 111) were CO-validated quitters by their last visit.

Table 1 presents women's demographics, medical and psychological characteristics according to outcomes. There was no significant association between intervention outcomes and medical or psychological profile ($p > 0.05$). 31.2% (n = 213) of all women reported previous depressive episodes.

80.5% (n = 549) of women smoked more that 10 cigarettes per day at baseline. Proportions presented on Table 2 show that women with high nicotine dependence were 5.3 times as likely to have never returned to a cessation service as to have stopped smoking. Women with low dependence were 2.7 times as likely to have never returned to a cessation service as to have stopped smoking. 81.2% (n = 554) of women were offered NRT. The offer of nicotine patch was a strong predictor of CO-validated cessation (Table 3). 31.8% (n = 217) was offered CBT. 25 of the 100 women who were offered nicotine patch and CBT stopped smoking (p = 0.007).

3.2. Reports on women who never returned to a cessation service

There were reports for 301 of them. Reports revealed that in 66 cases, a follow-up visit had been planned and/or an intervention had been assessed.

Six profiles were identified:

(1) Interest in reduction rather than cessation

93 women were either not interested in quitting or not ready. Reduction was the alternative they chose or that cessation specialists suggested.

- "[She is] determined to stop smoking but not ready. [She has] considerably reduced her consumption and would like to keep smoking a few cigarettes to help her deal with the anxiety of successfully managing her pregnancy."
- "[She is] not ready to stop smoking. Let's try reduction with diet council for harm reduction."

40 of these women had reduced by half their cigarette consumption since becoming pregnant.

(2) Low or no motivation to quit

50 women expressed no motivation to quit smoking.

- '[She has] low motivation. [She] came [to the service] following the recommendations of her gynaecologist; [she is] scared of failing."
- "Stopping smoking will be difficult because she has no personal motivation; she feels obligated."

Three women were sceptical about tobacco-related health risks.

(3) Smoking environment

26 women described a smoking environment at work or at home. For three of them, the partner was also considering cessation.

Table 1
Socio-demographic, medical and psychological characteristics according to intervention outcomes.

Characteristics	CO-validated quitters *n* (%)	Non-quitters *n* (%)	Never returned to a service *n* (%)	Total *n* (%)	*p*-value
Socio-demographic					
Age					0.033
16–24	14 (10.9)	22 (17.2)	92 (71.9)	128 (100.0)	
25–34	67 (17.7)	92 (24.3)	220 (58.0)	379 (100.0)	
35–48	30 (17.1)	49 (28.0)	96 (54.9)	175 (100.0)	
Education					0.045
No education	23 (15.8)	32 (21.9)	91 (62.3)	146 (100.0)	
Low-level vocational education	22 (14.1)	25 (16.0)	109 (69.9)	156 (100.0)	
Secondary school	7 (15.6)	8 (17.8)	30 (66.7)	45 (100.0)	
Secondary school graduate	17 (18.5)	26 (28.2)	49 (53.3)	92 (100.0)	
Higher	42 (17.6)	69 (29.0)	127 (53.4)	238 (100.0)	
Professional status					0.170
Employed	71 (17.1)	113 (27.3)	230 (55.6)	414 (100.0)	
Unemployed	16 (15.0)	21 (19.6)	70 (65.4)	107 (100.0)	
Inactive	21 (15.2)	24 (17.4)	93 (67.4)	138 (100.0)	
Trainee or student	3 (18.7)	3 (18.8)	10 (62.5)	16 (100.0)	
Referral through hospitalisation in another service					0.005
Yes	66 (18.6)	97 (27.4)	191 (54.0)	354 (100.0)	
No	45 (13.7)	66 (20.1)	217 (66.2)	328 (100.0)	
Medical and psychological					
History of respiratory disease					
Chronic obstructive pulmonary disease	3 (8.6)	9 (25.7)	23 (65.7)	35 (100.0)	0.447
Asthma	13 (15.9)	21 (25.6)	48 (58.5)	82 (100.0)	0.928
Cardiovascular risk factor					
High blood pressure	4 (15.4)	3 (11.5)	19 (73.1)	26 (100.0)	0.299
Diabetes	2 (12.5)	4 (25.0)	10 (62.5)	16 (100.0)	0.999
Hypercholesterolemia	6 (14.6)	13 (31.7)	22 (53.7)	41 (100.0)	0.484
History of depressive episodes	35 (16.4)	56 (26.3)	122 (57.3)	213 (100.0)	0.633
Baseline intake of psychotropic drug					
Anxiolytic	13 (25.5)	11 (21.6)	27 (52.9)	51 (100.0)	0.267
Antidepressant	10 (17.2)	16 (27.6)	32 (55.2)	58 (100.0)	0.697
Total	111 (16.3)	163 (23.9)	408 (59.8)	682 (100.0)	

- "[She] would like to stop smoking but is scared at the idea because her entire family smokes"

(4) Use of multiple substances

23 women associated tobacco with alcohol, cannabis or other drugs. A few had been able to reduce their tobacco consumption and stop using other substances during the pregnancy.

- "[She is] hospitalised in the addiction service for alcohol and codein withdrawal [...]. [She] is starting to get better. [Her] objective: reducing to 20 cigarettes per day with oral NRT."

(5) Hospitalised or confined to bed

For 21 women, cessation specialists recorded that hospitalisation temporarily compelled them to consider cessation. Most of them were hospitalised for obstetrical complications such as risks of spontaneous preterm delivery.

- "[She is] confined to bed and therefore forced not to smoke, it may be very difficult to quit. Intensive follow-up planned."

(6) Concerns towards nicotine replacement therapy

Ten women did not wish to be prescribed NRT. One had being advised against it by her gynaecologist.

3.3. Reports on CO-validated quitters

There were reports for 95 of the CO-validated quitters. Two main profiles emerged:

(1) High motivation to quit

Twenty-nine women expressed high motivation to quit. Most of them declared being motivated by pregnancy. Two had experienced the benefits of previous quit attempts.

- "[She marked her] motivation 7 [out of 10] because of her pregnancy. [She] smoked during previous pregnancies and [her] children suffer from respiratory diseases]
- "[She is] 1 month pregnant and very determined to quit [...]. [She has] already tried to stop smoking 2 years ago and is aware of the benefits of abstinence."

An association with high motivation to quit was not observed for seven women who reported being pressured to quit.

- "[She is] very determined (9/10). [She was] depressed during her previous quit attempt that led to 2 months abstinence. But she was being pressured by her partner, a non-smoker."

(2) Cigarette fading

Table 2
Smoking-related characteristics and intervention details according to intervention outcomes.

Characteristics	CO-validated quitters *n* (%)	Non-quitters *n* (%)	Never returned to a service *n* (%)	Total *n* (%)	*p*-value
Smoking profile					
Number of quit attempts					0.039
None	35 (12.4)	65 (23.0)	183 (64.6)	283 (100.0)	
One	38 (17.5)	61 (28.1)	118 (54.4)	217 (100.0)	
More than one	37 (20.9)	36 (20.3)	104 (58.8)	177 (100.0)	
Nicotine dependence					0.029
Low	55 (21.5)	54 (21.1)	147 (57.4)	256 (100.0)	
Medium	30 (13.8)	61 (28.1)	126 (58.1)	217 (100.0)	
High	25 (12.3)	47 (23.0)	132 (64.7)	204 (100.0)	
Number of cigarettes smoked daily					0.303
Mean (SD)	14.3 (7.5)	15.0 (7.3)	15.7 (8.8)	15.3 (8.2)	
Range	0–40	4–40	0–60	0–60	
CO level at first visit (ppm)					0.021
Mean (SD)	16.3 (11.1)	20.2 (11.4)	19.7 (12.8)	19.3 (12.3)	
Range	0–44	0–39	0–78	0–78	
CO level at first visit per cigarette					0.750
Mean (SD)	1.5 (1.6)	1.6 (1.0)	1.6 (2.3)	1.6 (1.9)	
Range	0–11.3	0–5.7	0–34	0–34	
Age started regular smoking (years)					0.020
15 or below	54 (13.6)	89 (22.4)	254 (64.0)	397 (100.0)	
Above 15	57 (20.0)	74 (26.0)	154 (54.0)	285 (100.0)	
Intervention					
NRT (patch, gum, tablet or inhaler)	90 (16.2)	141 (25.5)	323 (58.3)	554 (100.0)	0.095
Nicotine patch	63 (21.9)	71 (24.6)	154 (53.5)	288 (100.0)	0.0005
Psychotropic drug					
Anxiolytic	1 (10.0)	5 (50.0)	4 (40.0)	10 (100.0)	0.079
Antidepressant	5 (26.3)	6 (31.6)	8 (42.1)	19 (100.0)	0.093
Behavioural therapy	36 (16.6)	63 (29.0)	118 (54.4)	217 (100.0)	0.097
Total number of visits					<0.0001
One	0 (0.0)	0 (0.0)	408 (100.0)	408 (100.0)	
Two	38 (28.4)	96 (71.6)	0 (0.0)	134 (100.0)	
Three	35 (58.3)	25 (41.7)	0 (0.0)	60 (100.0)	
Four or more	38 (47.5)	42 (52.5)	0 (0.0)	80 (100.0)	
Total	111 (16.3)	163 (23.9)	408 (59.8)	682 (100.0)	

25 women considered reduction as the first step before complete cessation. Most had reduced their consumption at the beginning of their pregnancy.

- "[She is] very determined to stop smoking and has set a quit date. [She] has started cutting down, which is very difficult. This is why she sought help to stop smoking]
- "[She] aims at complete cessation. [She] has already started cutting down."

20 of these women had reduced by half their cigarette consumption since becoming pregnant.

4. Comment

16.3% of pregnant smokers quit during their pregnancy, a rate in agreement with previous findings [18]. However, 59.8% did not respond to the offer of cessation services. They were often

Table 3
Logistic regression models for prediction of CO-validated cessation.

Characteristics	CO-validated cessation vs. non cessation	CO-validated cessation vs. never returning to a service	CO-validated cessation vs. non cessation and never returning to a service
	OR (95% CI)	OR (95% CI)	OR (95% CI)
Psychological profile			
Baseline intake of Anxiolytic	3.302 (1.295–8.419)	3.162 (1.453–6.880)	3.202 (1.525–6.726)
Smoking profile			
Medium nicotine dependence vs. low nicotine dependence	0.385 (0.209–0.708)	0.467 (0.272–0.802)	0.440 (0.261–0.742)
High nicotine dependence vs. low nicotine dependence	0.310 (0.158–0.611)	0.304 (0.166–0.555)	0.306 (0.170–0.550)
Intervention			
Nicotine patch	2.385 (1.408–4.039)	2.965 (1.857–4.732)	2.780 (1.767–4.374)

All variables were considered except for the number of visits and the level of carbon monoxide per cigarette that were not baseline variables from the questionnaire; significance of likelihood ratio tests: $p < 0.0001$.

interested in reduction rather than complete abstinence, for which they showed little motivation.

They did not return to a cessation service despite being referred by medical staff (antenatal care providers or through hospitalisation) and being offered an intervention plan. Women may have either agreed to an intervention with a bias toward social desirability or simply changed their mind once in their home environment [16]. The lack of support from their partners who smoked could thus explain them not returning to a cessation service. They also feared that exposure to environmental smoking would make it impossible to consider or sustain abstinence. Support from their partners is an important predictor of cessation among pregnant smokers [19].

As expected, low dependence was a predictor of successful cessation [7,10]. Surprisingly, most women were heavy smokers at baseline. Heavy smokers are known to consider reduction once pregnant [20,21]. Besides, some French obstetricians do not routinely address the matter of smoking and tolerate up to five cigarettes per day to preserve women from feeling guilty [11]. That explains why the topic of reduction emerged for CO-validated quitters and for women who did not return to a cessation service. For quitters, cigarette fading was a first step towards abstinence, which they were expecting to achieve with the help of specialists. It is however concerning that baseline CO levels per cigarette smoked were high whatever the outcome. Although most of our smokers try to cut down, they obviously compensate by inhaling more deeply. Aside from a lessen exposure, reduction can hardly be related to health benefits for the baby [22].

Nevertheless, for women who did not return to a cessation service, specialists suggested reduction as an alternative given their lack of motivation to quit. Women were particularly unlikely to stop smoking if they also used other substances [23]. Hospitalisation for obstetrical complications could have been an opportunity to realise that smoking might jeopardise their pregnancy. Unfortunately, it was not enough to motivate them.

Minimising the dangers of tobacco and continuing to smoke for stress relief illustrate an ambivalent attitude towards tobacco addiction. Women who did not return to a cessation service might have been in denial of the necessity to quit. To them, the health risks associated with smoking are outweighed by the punctual pleasure provided by smoking [24]. Indeed, many factors make cessation during pregnancy very challenging: stress associated with pregnancy and the upcoming motherhood, fear of being unable to maintain abstinence in a smoking environment, social pressure, guilt of being unable to quit [24]. Cigarettes are therefore a prop for dealing with all these stress factors.

CO-validated quitters reported the use of anxiolytics as often as non-quitters. Yet, the baseline intake of anxiolytics tripled the odds of cessation (OR: 3.202; $p < 0.0001$). It might be because anxiety can either be a barrier to cessation (stress, family problems) or a motivator (concerns for health) [25]. Nevertheless, few women were prescribed psychotropic medication. It should be prescribed cautiously during pregnancy, with regards to the safety of mothers and their children [26].

The safety and effectiveness of NRT during pregnancy is still to be proven. However, the greater risk associated with continued smoking justifies that cessation specialists consider NRT, especially with heavy smokers [8]. We do not know why some women refused NRT, except for one who had been advised against it by her gynaecologist. Based on literature, it might be a matter of the cost of NRT, scepticism about efficiency, or fear (among heavy smokers) of receiving too much nicotine when smoking with a patch [27]. Evidently, the use of NRT should be discussed more thoroughly between antenatal care providers, tobacco cessation specialists and pregnant smokers [28].

The term of pregnancy was not routinely recorded in the database, which deprives our analysis from an interesting perspective. Nevertheless, cessation is beneficiary at any point in the pregnancy [8,12]. One of our strengths is that abstinence is biochemically confirmed. CO measuring is the cheapest and most practical biochemical routine indicator (free for smokers unlike urinary cotinine measuring). It has been recommended by consensus in France in routine care for pregnant smokers for its informative and motivational impact on them [12,17]. An alternative might be salivary cotinine but it is not as well-spread in French medical laboratories.

Despite referral to a cessation service, it is difficult to achieve contact with pregnant smokers [15,16]. Results from our qualitative analysis agree with McGowan et al. who suggest that women who do not respond to the offer of cessation services are not really interested in stopping smoking [16]. In our case, we do not know if these pregnant smokers quit without specialised help. It is however unlikely considering that the lack of specialist support or medical information is often linked with continued smoking in pregnancy [7,15].

The small proportion of pregnant women in the national database illustrates the difficulty to improve the uptake of specialist support among pregnant smokers [15]. In response to a need for epidemiological data on pregnant smokers, our study addresses maternal smoking at a national scope. Previous regional surveys have uncovered that continued smoking during pregnancy is associated with high dependence, low perception of health risks, lack of medical advice, need for psychosocial support [7,10,11]. Our findings confirm that description of French pregnant smokers and complement it with information about their attitude towards cessation.

Focus should be on helping pregnant women deal with stress factors. Follow-up interventions coordinated with antenatal care as well as telephone counselling could help ensure that women attend more than one appointment for cessation.

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References

[1] Jauniaux E, Burton GJ. Morphological and biological effects of maternal exposure to tobacco smoke on the feto-placental unit. Early Hum Dev 2007;83(11):699–706.
[2] Ministère de la Santé, de la Jeunesse et des Sports. [2003–2007 National plan against cancer]. Available at: http://www.sante.gouv.fr/htm/dossiers/cancer/plaquette_cancer.pdf, accessed March 19, 2009.
[3] Jeanfrançois M, Fernandes E, Dautzenberg B, Dupont P, Ruelland A. Evolution de l'activité des consultations de tabacologie 2000–2003 [Development of the activity of smoking cessation services 2000–2003]. BEH 2003;22–23:108.
[4] Peretti-Watel P, Beck F, Wilquin J-L [Cigarettes and the French in 2005: the divorce is yet to be completed]. In: Beck F, Guilbert P (conducted by) Gautier A [2005 health barometer]. Saint-Denis: INPES; 2007. p. 77–110.
[5] Garelik D. Nicotine substitutes during pregnancy. Gynecol Obstet Fertil 2007;35(6):607–8.
[6] Schneider S, Schütz J. Who smokes during pregnancy? A systematic literature review of population-based surveys conducted in developed countries between 1997 and 2006. Eur J Contracept Reprod Health Care 2008;13(2):138–47.
[7] Grange G, Vayssiere C, Borgne A, et al. Description of tobacco addiction in pregnant women. Eur J Obstet Gynecol Reprod Biol 2005;120(2):146–51.
[8] Fiore M, Jaén C, Baker T, et al. Treating tobacco use and dependence: 2008 update. Available at: http://www.surgeongeneral.gov/tobacco/treating_tobacco_use08.pdf, accessed March 22, 2009.
[9] Russell T, Crawford M, Woodby L. Measurements for active cigarette smoke exposure in prevalence and cessation studies: why simply asking pregnant women isn't enough. Nicotine Tob Res 2004;6(Suppl 2):S141–51.

[10] Blanchon B, Parmentier M, Colau JC, Dautzenberg B, Blum-Boisgard C. Smoking and pregnancy: survey among women enrolled in an independent worker insurance program. J Gynecol Obstet Biol Reprod (Paris) 2004;33(1 Pt 1):21–9.
[11] Bertrand ML, Vegezzi MP, Ecoe R, Dietsch J. Smoking and pregnancy: the role of the gynecologist-obstetrician and the obstetrical team. J Gynecol Obstet Biol Reprod (Paris) 2005;34 [spec no. 1:3S318-25].
[12] Alliance Contre le Tabac, Association Périnatalité Prévention Recherche Information, Ligue Nationale Contre le Cancer, Réseau Européen Hôpital Sans Tabac, Réseau Hôpital Sans Tabac. [Consensus conference on pregnancy and smoking, 7–8 October 2004, Lille, France. (text of guidelines, long version)]. J Gynecol Obstet Biol Reprod (Paris) 2005;34 Spec No. 1:3S21–44.
[13] Le Faou AL, Baha M, Rodon N, Lagrue G, Menard J. Trends in the profile of smokers registered in a national database from 2001 to 2006: changes in smoking habits. Public Health 2009;123(1):6–11.
[14] Heatherton TF, Kozlowski LT, Frecker RC, Fagerstrom KO. The fagerstrom test for nicotine dependence: a revision of the Fagerstrom Tolerance Questionnaire. Br J Addict 1991;86(9):1119–27.
[15] West R, McNeil A, Raw M. Smoking cessation guidelines for Scotland: 2004 update. Edinburgh: Health Scotland; 2004.
[16] McGowan A, Hamilton S, Barnett D, Nsofor M, Proudfoot J, Tappin DM. 'Breathe': the stop smoking service for pregnant women in Glasgow. Midwifery 2008.
[17] Gomez C, Marquis P. How should markers of smoking be used during pregnancy? J Gynecol Obstet Biol Reprod 2005;34(Suppl 1):171–81.
[18] Hegaard HK, Kjaergaard H, Moller LF, Wachmann H, Ottesen B. Multimodal intervention raises smoking cessation rate during pregnancy. Acta Obstet Gynecol Scand 2003;82(9):813–9.
[19] Gage JD, Everett KD, Bullock L. A review of research literature addressing male partners and smoking during pregnancy. J Obstet Gynecol Neonatal Nurs 2007;36(6):574–80.
[20] Nichter M, Muramoto M, Adrian S, Goldade K, Tesler L, Thompson J. Smoking among low-income pregnant women: an ethnographic analysis. Health Educ Behav 2007;34(5):748–64.
[21] Valbo A, Nylander G. Smoking cessation in pregnancy. Intervention among heavy smokers. Acta Obstet Gynecol Scand 1994;73(3):215–9.
[22] Pisinger C, Godtfredsen NS. Is there a health benefit of reduced tobacco consumption? A systematic review. Nicotine Tob Res 2007;9(6):631–46.
[23] Burns L, Mattick RP, Wallace C. Smoking patterns and outcomes in a population of pregnant women with other substance use disorders. Nicotine Tob Res 2008;10(6):969–74.
[24] Ebert LM, Fahy K. Why do women continue to smoke in pregnancy? Women Birth 2007;20(4):161–8.
[25] Zvolensky MJ, Vujanovic AA, Miller MO, et al. Incremental validity of anxiety sensitivity in terms of motivation to quit, reasons for quitting, and barriers to quitting among community-recruited daily smokers. Nicotine Tob Res 2007;9(9):965–75.
[26] Iqbal MM, Sobhan T, Aftab SR, Mahmud SZ. Diazepam use during pregnancy: a review of the literature. Del Med J 2002;74(3):127–35.
[27] Hotham ED, Atkinson ER, Gilbert AL. Focus groups with pregnant smokers: barriers to cessation, attitudes to nicotine patch use and perceptions of cessation counselling by care providers. Drug Alcohol Rev 2002;21(2):163–8.
[28] Rigotti NA, Park ER, Chang Y, Regan S. Smoking cessation medication use among pregnant and postpartum smokers. Obstet Gynecol 2008;111(2 Pt 1):348–55.