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## **► To cite this version:**

Deborah Loyal, Anne-Laure Sutter-Dallay, Marc Auriacombe, Fuschia Serre, Nicolas Calcagni, et al.. Stigma Attached to Smoking Pregnant Women: A Qualitative Insight in the General French Population. Nicotine and Tobacco Research, 2021, <10.1093/ntr/ntab190>. <hal-03438997>

**HAL Id: hal-03438997**

**<https://hal.science/hal-03438997v1>**

Submitted on 16 Dec 2021

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# STIGMA ATTACHED TO SMOKING PREGNANT WOMEN

## Stigma Attached to Smoking Pregnant Women: A Qualitative Insight in the General French Population

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**Introduction.** Cigarette consumption during pregnancy has major health consequences for women and unborn children. The stigma of smoking during pregnancy might hinder mothers-to-be's access to adequate healthcare and smoking cessation, especially in disadvantaged groups. This qualitative study was designed to describe extensively the public stigma associated with smoking during pregnancy. **Method.** Participants were French adults recruited from the general population through social networks (N=100). They were asked to answer three pairs of open-ended questions regarding cognitions, emotions and behaviours elicited in the general population by pregnant smoking women. An inductive thematic analysis was performed and inter-judge agreement was computed on 30% of the corpus analysed deductively. Finally, independence (chi-square) between themes and gender, education, parenthood and smoking status was tested. **Results.** Themes (n=25) were defined regarding cognitions (n=9, e.g., irresponsible, thoughtless and unmindful, etc.), emotions (n=8, e.g., anger, disgust, etc.) and behaviours (n=8, e.g., inform and persuade, moralise and blame, etc.). Global inter-judge agreement was strong ( $\kappa=0.8$ ). No difference was observed in themes according to gender, parental status or education, indicating a heterogeneous awareness of stigma. However, some differences were observed according to smoking status ( $\chi^2 = 69.59$ ,  $p = 0.02$ ) (e.g., non-smokers more frequently stressed immorality). **Conclusion.** The stigma associated with smoking during pregnancy includes various components that might be measured and targeted in interventions to improve access to adequate healthcare and smoking cessation in this specific population.

**Implications.** This qualitative study explores the stigma that the general French population attaches to pregnant women who smoke. Themes regarding cognitions (e.g., irresponsible, thoughtless and unmindful, etc.), emotions (e.g., anger, disgust, etc.) and behaviours (e.g., inform and persuade, moralise and blame, etc.) were identified. These themes could guide further research regarding scale development and anti-stigma interventions to support smoking cessation.

## **Introduction.**

In 2016, 32.9% of French adults were smokers. This is higher than in the USA (21.9%), Spain (29.4%), Belgium (28.3%), Ireland (24.4%), Portugal (23.2%), Norway (20.2%), and Europe (28.7%).<sup>1</sup> Smoking has well-known and serious health consequences, such as the development of cancer, cardiovascular and respiratory diseases and the impairment of reproductive functions.<sup>2</sup> Worldwide, smoking is associated with the death of 6 million people annually.<sup>3</sup>

During the past 50 years, in industrialised countries, social attitudes towards smokers have undergone a strong shift. Cigarette smoking is no longer regarded as a glamorous, upper-class activity.<sup>4</sup> Numerous authors have suggested that although tobacco-control policies are required and efficient, they might accidentally enhance the stigma of smoking.<sup>5,6</sup> Stigma is an “attribute that is deeply discrediting” and reduces someone “from a whole and usual person to a tainted, discounted one”.<sup>7</sup> Stigma can be attached to physical appearance (obesity, infirmity) deviant behaviours or conditions (mental illness, addiction, unemployment) or membership of a particular community (ethnic or religious groups).<sup>7</sup> Cognitions (“They are dangerous”) are at the core of stigma and can trigger both emotional (“I am scared of them”) and behavioural reactions (“I avoid them”).<sup>8</sup> Today, health has become an important value and is widely regarded as being mainly dependent on the individual’s behaviour.<sup>9</sup> As a consequence, smokers are subjected to moral condemnation for damaging their health and shortening their life expectancy. They are described as being selfish, thoughtless and undereducated.<sup>4,10</sup> Smokers are also subjected to social rejection and are regarded as undesirable housemates,<sup>4</sup> bad employees<sup>4,11</sup> and unattractive love interests.<sup>4,12</sup> Smokers themselves perceive this social disapproval<sup>13</sup> in family members, co-workers, healthcare providers and even strangers.<sup>14</sup>

Whereas smoking has diminished in French men from 1980 (51.5%) to 2012 (34.4%), it has increased substantially in French women over the same period (18.8%–27.7%).<sup>15</sup> Pregnancy is often regarded as an opportunity to promote smoking cessation. However, 14.2% of pregnant French women smoke. This is higher than the prevalence reported in Sweden (5.4%), Switzerland (5.5%) and the United Kingdom (6.9%).<sup>16</sup> In addition to the well-known risks that smoking poses to women’s health<sup>2</sup>, tobacco consumption during pregnancy is associated with many health risks for the pregnancy and the unborn child.<sup>17</sup> These risks include ectopic pregnancy, placenta insufficiency, spontaneous abortion, stillbirths, neonatal deaths, preterm birth, intrauterine growth retardation and birth defects.<sup>17–19</sup>

The societal expectation is that a pregnant woman will promote her health and protect her unborn child.<sup>20</sup> Moreover, a sense of public ownership of a pregnant woman's body serves to justify the formation and expression of judgments and commentaries about their health behaviour that would be considered socially inappropriate for other people.<sup>21</sup> Thus, pregnant smokers might experience an even greater degree of stigma than other smokers. Scholars have observed that pregnant smoking women were rated more negatively (selfish and ignorant) than women who were smokers but not pregnant.<sup>22</sup> Smoking women were also regarded as bad mothers.<sup>22</sup> Most women who smoked while pregnant experienced strong negative social attitudes and reported feeling guilty, shameful and miserable.<sup>23</sup> Many report unpleasant social experiences, such as receiving harsh criticism from family, friends, coworkers and health professionals<sup>23</sup>.

While many researchers have studied the reasons that pregnant women keep smoking, little research has focused on the ways in which people perceive and respond to smoking pregnant women. Smoking stigma, especially in pregnant women, is an understudied topic, and of the studies that have been conducted, few are quantitative.<sup>14</sup> However, extensively describing the stigma associated with smoking during pregnancy might be helpful to support smoking cessation. It is well established that self-stigma is associated with poor mental health in various stigmatised situations (mental illness, non-heterosexual orientation, etc.).<sup>24</sup> Self-stigma is also a well-documented barrier to healthcare-seeking behaviour and adherence to treatment.<sup>25</sup> Smoking self-stigma has been associated with the desire to stop smoking but also with negative consequences (anxiety, depression, guilt, low self-esteem and defensiveness, etc.), which then act to prevent smoking cessation.<sup>14</sup> More recently, it has been observed that stigma was associated with lower intention to stop smoking in people with low levels of self-efficacy and low income.<sup>26</sup> In an experimental study, it was also observed that stereotype threat (situation in which a person is concerned about being judged or treated negatively on the basis of stereotypes<sup>27</sup>) facilitates the inability to delay cigarette consumption.<sup>28</sup> Stigma can also lead some smokers (8%–13%) to hide their smoking behaviour from healthcare providers.<sup>29</sup> It is especially noteworthy in pregnant smoking women, who under-report or hide their smoking behaviour (22.9%) more than non-pregnant women do (9.2%).<sup>30</sup> Thus, stigma potentially prevents access to adequate healthcare for pregnant women who smoke, because of its association with distress and non-disclosure of their smoking status. Moreover, stigma has been shown to impact on the behaviour of healthcare providers dealing with mental health and substance-use disorders.<sup>31,32</sup> Professionals who hold stigmatising attitudes towards people with substance-use disorders are less engaged and have a more task-oriented approach in healthcare provision, resulting in lower levels of personal involvement and empathy.<sup>32</sup>

Although no studies have focused specifically on the reduction of the stigma of smoking, a large corpus of literature, especially in the field of mental health, shows that it is possible to reduce stigma in the general population<sup>33,34</sup>, among healthcare providers<sup>35</sup> and in the victims of stigma themselves.<sup>36</sup> However, to develop interventions aimed at reducing the stigma of smoking during pregnancy, it is necessary to have an adequate tool to assess it. Currently, no tool has been designed to measure the stigma of smoking during pregnancy. Two scales are used to assess the stigma of smoking in general, but these have been derived from measures of mental health stigma.<sup>13,37</sup> Boateng et al. strongly recommend the use of qualitative inductive methods to identify relevant themes and to generate adequate items from the responses of individuals.<sup>38</sup> For that reason, the Pregnant Smoker Stigma Scale (P3S) study was designed to build a scale assessing the stigma associated with smoking during pregnancy in both the general population (public stigma) and pregnant smoking women (self-stigma). The first step in this study was to describe this stigma in the general population. This description will guide the subsequent scale construction. The aim of this paper is to document this first step.

## **Method.**

### *Procedure and Participants.*

Participants were French adults recruited from the general population through social media (Facebook). They had to be resident in France and older than 18. A brief presentation of the study was posted on various community groups of residents of and students in French cities (Anglet, Angoulême, Biarritz, Bordeaux, Bayonne, Caen, Cannes, La Rochelle, Lille, Lyon, Marseille, Montpellier, Nancy, Nantes, Nice, Paris, Poitiers, Reims, Rennes, Rouen, Strasbourg, Toulon and Toulouse). Participants were automatically directed to the questionnaire hosted at LimeSurvey (<https://www.limesurvey.org/>). All participants received written information and signed an informed consent form. All procedures were performed in accordance with the 1964 Declaration of Helsinki and its subsequent amendments. This study was approved by an institutional review board (IRB00003888, IORG0003254, FWA00005831).

### *Assessment.*

Cognitions are at the core of stigma and can trigger both emotional and behavioural reactions.<sup>8</sup> Therefore, three pairs of open-ended questions were formulated by consensus of the research team members and used to explore cognitions, emotions and behaviours elicited by pregnant smoking women (Table 1). To avoid social desirability bias which is commonly observed in online data collection,<sup>39</sup> these questions were formulated to ask what ‘most people’ think, feel and do. Next, participants were requested to provide a range of personal

characteristics (age, gender, marital and parental status, education and employment) and to indicate their smoking status.

### *Analyses.*

Our approach is in line with grounded theory.<sup>40</sup> After an initial screening of the data, a thematic analysis<sup>41</sup> was performed, taking an inductive approach. Thereafter, a thematic guide was constructed. The coding order was randomly selected. This analysis was performed by a research team member with significant experience in qualitative data analyses (DL, health psychologist, PhD, female, former smoker). Our sample size is bigger than what is usually observed in qualitative research and is sufficient to ensure data saturation.<sup>42</sup> Themes that were deemed too small ( $n < 5$ ) to be significant in the context of stigma were excluded. Per definition, stigma is supposed to be widely shared and well known among members of a culture.<sup>43</sup> To ensure reliability, another researcher with significant experience in qualitative data analyses (NC, health psychologist, PhD, male, former smoker) performed an independent deductive thematic analysis using the thematic guide on 30% of data randomly selected. An inter-judge agreement was computed. Cohen's kappa coefficient indicates the level of agreement that might be weak ( $\geq .40$ ) moderate ( $\geq .60$ ), strong ( $\geq .80$ ), or very strong ( $\geq .90$ ). Finally, chi-square test for independence was performed to explore whether the themes differed according to gender, education, parenthood and smoking status. Thematic analysis and inter-judge agreement were performed with Nvivo 12 software. Descriptive statistics and chi-square were computed with RStudio software (version 1.2.5033).

### **Results.**

Participant characteristics are presented in Table 2 (N=100). The average age of participants was 31 (M=30.92, SD=11.97, range = 18-63 years). Women constituted 60% of the participants and men 40%. Nearly half of the participants were smokers (46%), while 33% were non-smokers and 21% were former smokers. One third of the participants had children (33%).

Regarding the qualitative data production, participants generated content that was nearly 50 words long (M=49.17, SD=49.19). There was no significant difference in the number of words generated according to gender, education, parental status or smoking status.

Themes ( $n=25$ ) were defined regarding cognitions ( $n=9$ , irresponsible, thoughtless and unmindful, selfish, immoral, neglectful, dangerous, bad mother, addicted, stupid), emotions ( $n=8$ , anger, disgust, sadness

and pity, incomprehension, shock, disregard, fear and worries, discomfort) and behaviours (n=8, inform and persuade, moralise and blame, judge and disapprove, criticise and reproach, reprimand and aggress, support and understand, no reaction, avoid and reject). Themes and quotes are presented in Table 3. Smaller themes that were mentioned less than five times were not presented but only mentioned as table notes. Cohen's kappa indicated a strong level of agreement for the coding as a whole ( $\kappa = .8$ ) and each theme ( $\kappa > .6$ ) except for "support and understand" ( $\kappa = 0.24$ ) and "avoid and reject" ( $\kappa = 0.39$ ) (see Table 3).

Independence (chi-square) between the themes and various variables (gender, parenthood, smoking status and education) was tested. No difference was observed according to gender ( $\chi^2 = 25.27$ ,  $p = .37$ ), parenthood ( $\chi^2 = 32.36$ ,  $p = 0.11$ ) or education ( $\chi^2 = 56.04$ ,  $p = 0.20$ ). Some differences were observed regarding smoking status ( $\chi^2 = 69.59$ ,  $p = 0.02$ ). Standardised residuals were observed to check for meaningful associations ( $\geq 2$ ) (Table 4). Non-smokers more frequently emphasised immorality and lack of reaction themes, while smokers less frequently emphasised the addiction theme. The "sadness and pity" theme was more frequent in non-smokers than in smokers.

### **Discussion.**

The P3S study was designed to build a scale that assessed the stigma associated with smoking during pregnancy in both the general population (public stigma) and pregnant smoking women (internalisation leading to self-stigma). This study's first step was to describe this stigma in the general population, in order to guide the scale construction thereafter. Indeed, to decide which themes and items should be included in the development of a scale, qualitative inductive methods are strongly advised.<sup>38</sup> Such analyses guide item generation and formulation as closely as possible to the speech of participants<sup>38</sup>. The aim of this paper is to document this first step.

As mentioned, French adults recruited from the general population through Facebook were asked what "most people" think, feel and do when they encounter pregnant women who smoke. Our analysis identified 25 themes regarding cognitions (n=9), emotions (n=8) and behaviours (n=8) that are elicited by pregnant smoking women in the general population.

First, cognitions regarding women who smoke while pregnant need to be understood within the broader framework of the contemporary risk society.<sup>44</sup> In modern Western societies, individual risk management has become a moral imperative,<sup>9</sup> one that is especially imbued in the 'good mothering' mandate.<sup>20,45-47</sup> The failure to protect oneself against risk is construed as a moral violation of the responsible, civilised and ordered middle-class body.<sup>48</sup> Themes in our analysis reflected how women who smoke during their pregnancy were considered

to have failed this moral imperative. They were portrayed as thoughtless and unmindful because they ignore risks and do not manage them adequately (*"She acts rashly and does not weigh up the risks."*). Such women are even labelled dangerous because they deliberately expose their unborn child to health risks (*"She poisons her baby"*). They are also portrayed as neglectful (*"She cares little about her child's health and is negligent with him"*) and selfish mothers (*"She values her pleasure over the smooth growth of the foetus"*) who do not care about their unborn child and its health. It is in conflict with the very definition of mothering as a "set of activities and relationships involved in nurturing and caring for people".<sup>49</sup> Mothers are also supposed to be highly selfless, because "the very definition of good mothering includes the willingness to give up things so that your children can have things"<sup>47</sup>. Moreover, women who smoke during their pregnancy were portrayed as immoral. This perception is expressed in simple statements (*"I think it's wrong"*) but also in highly pejorative terms (*"It's a shame"*, *"She's a whore"*, *"She is not worthy of being a mother"*). The observation was made earlier that unhealthy behaviour (e.g. overeating, lack of exercise, etc.) are thought to be associated with a lack of morality.<sup>50</sup> Moreover, morality is an important aspect of the motherhood mandate.<sup>47</sup> It is important to note that immorality has been associated with disgust and behavioural avoidance<sup>51</sup>, two themes that emerged from our analyses. Some participants mentioned that smoking when pregnant was an addiction issue. However, this was not a frequent theme when compared to the themes of being irresponsible, thoughtless, unmindful and selfish. Viewing smoking during pregnancy as an addiction issue is probably factually accurate, and this view lacks the moral condemnation that this transgression evokes in most people. Unexpectedly, some participants (n=2) commented that women who smoke while pregnant might also be consuming alcohol (*"Maybe she also drinks"*). This was not a frequent comment, but it might have important implications given the stigma that is also attached to alcohol consumption during pregnancy.<sup>52</sup> Thus, a woman who smokes during pregnancy might be regarded through the lens of multiple stigmatising behaviours.<sup>53</sup> Finally, women smoking during their pregnancy are portrayed as bad mothers. This has been described previously in the literature and is not surprising.<sup>22,44</sup> Nevertheless, this remains an important finding because being a good mother is central to the identity of most mothers<sup>54</sup>. Being labelled and labelling oneself as a bad mother could cause depressive symptoms in mothers-to-be who smoke and prevent them from successfully giving up smoking.<sup>55</sup>

It is of interest to note that previous studies have found some of the emotions reported in this study to be similarly elicited by groups that are low in competence. These emotional responses are triggered by groups that are either high in warmth (e.g. feeling pity for disabled or elderly people) or low in warmth (e.g. feeling disregard for poor or homeless people).<sup>56</sup> This correspondence is notable, because it indicates that pregnant



smokers might be at the receiving end of both contemptuous and paternalistic prejudice.<sup>56</sup> This double prejudice possibly stems from the fact that pregnant smokers generate ambivalent feelings because they combine a positive feature (being pregnant) and a negative one (smoking). This double prejudice could also be related to the complex attitude that many people have towards those who struggle with addiction. They are often framed either as criminals who should be held morally responsible for their behaviour (contemptuous prejudice) or as victims of a disease (paternalistic prejudice).<sup>57</sup> However, it is important to note that participants mentioned feeling sadness and pity for both the mother and the baby (e.g., “*sad for her and her child*”) but sometimes for the unborn child only (e.g., “*sadness for the baby, who is endangered*”). Anger has also been associated with low-warmth groups such as poor or homeless people.<sup>58</sup> This emotion is usually associated with the perception of a violation of social norms and threat to the group’s moral standing<sup>59,60</sup>. However, anger might also be precipitated by disgust.<sup>51,59</sup> As mentioned above, disgust is frequently mentioned in our analysis and has been associated with perceptions of immorality and a threat being posed to group values.<sup>51,59</sup> Anger and disgust are also described as manifestations of a moral outrage.<sup>44</sup> Indeed, pregnant smokers challenge the dominant view of the ideal, selfless mother who rationally screens for and avoids various risks to protect her precious and innocent unborn child. This discrepancy or cognitive dissonance could enforce discomfort<sup>61</sup> and consequent behaviours of rejection or avoidance of pregnant smokers.

Regarding behaviours, one might assume that they can easily be divided into two main descriptive categories, namely harmful behaviours (moralise and blame, judge and disapprove, criticise and reproach, reprimand and aggress, avoid and reject) and facilitative behaviours (inform and persuade, support and understand).<sup>58</sup> However, the matter is more complex than that. First, information and persuasion can certainly be seen as well-meaning behaviour by people who are genuinely concerned about the health of their loved one. However, receiving advice about one’s smoking may unfortunately trigger reactance in some smokers and pregnant smokers.<sup>62</sup> Obviously, the manner in which such information is imparted plays a role. The aggressive, unsolicited and commanding provision of information is not equivalent to a benevolent and mutual discussion about tobacco use. Secondly, harmful behaviours can be divided into active or punitive harm (criticise and reproach, reprimand and aggress, etc.) and passive harm (avoid and reject).<sup>58</sup> While active harm might be associated with disregard only, passive harm might be associated with both disregard and pity.<sup>58</sup> Similarly, emotions such as disregard and disgust could feed into indirect and collective forms of punishment, such as mockery and exclusion.<sup>60</sup> Our results regarding active harm (criticise and reproach, reprimand and aggress) are in accordance with the findings of previous qualitative studies that many pregnant women who smoke report

unpleasant social experiences.<sup>23</sup> Moreover, results regarding avoidance and rejection are in accordance with the literature, which shows that smokers are seen as undesirable persons.<sup>4,11,12,63</sup> It is especially important when considering that social network and support work in favour of both good postnatal mental health<sup>64</sup> and smoking cessation.<sup>65</sup> Generally, our results support the idea that smoking during pregnancy is mostly seen as reprehensible<sup>21,44</sup> and that this view motivates various punitive behaviours. Other scholars have previously indicated that smoking during pregnancy and around young children could even be viewed by some as a form of child abuse and calls for punitive legislation and policies.<sup>66,67</sup>

Finally, the test of independence between themes and various variables (gender, education, smoking status and parental status) found no major differences between participants with diverse personal characteristics. This finding confirms, as expected, that the awareness of the stigma attached to smoking during pregnancy is widespread.<sup>43</sup> However, some differences were observed in line with smoking status. First, non-smokers reported more frequently lack of reaction. This difference in response might stem from the fact that smokers and former smokers are more aware of smoking eliciting negative reactions because they have experienced such responses in various contexts.<sup>13,14</sup> Differences in the responses relating to immorality, addiction, and sadness and pity seem to indicate a stronger awareness of these notions in non-smokers. Those differences are difficult to interpret given that participants were asked to report on what “most people think, feel and do” (e.g., “The common opinion is to criticise them for their selfishness”). However, some participants were clearly expressing their personal point of view (e.g., “I would not hesitate to tell her what I think – that it’s a shame not to want the best for your baby’s health.”). The difference in responses in line with smoking status could be explained by the fact that non-smokers endorse harsh attitudes more strongly.

This study documents extensively the stigma that is attached to women who smoke when pregnant. The next step in the study will be to develop a new scale, the P3S, to quantify this stigma. The P3S items will be written as closely as possible to participants’ speech to assess each theme. Providing researchers with a scale to assess the stigma of smoking when pregnant could spark new research efforts to better understand this stigma and its impact. This would enable the design of innovative interventions to decrease the stigma.

This study has some limitations, which should be acknowledged. First, this study examines the stigma of smoking when pregnant in French society. While some core cognitions, emotions and behaviours might be shared by certain countries, others might not. This difference could be the result of a range of variables, such as the strictness of tobacco control measures, family policy (social programs, laws, and public directives regarding family) or gender ideology. It would be of value to conduct studies similar to this one in countries with stricter

(Ireland, United Kingdom, Norway) or more lenient (Luxembourg Romania, Latvia) tobacco control policies.<sup>68</sup> Secondly, this study relies on online recruitment and data collection. Research about online recruitment and data collection is still scarce, but the field offers promising research opportunities.<sup>69</sup> The internet and social media offer a cost-effective way to quickly recruit a large number of participants. However, issues have been raised regarding the representativeness of samples recruited online. Internet users are known to be younger, wealthier and more educated than non-users.<sup>70</sup> Moreover, our recruitment method through various Facebook community groups of residents of and students in major French cities might over-represent younger people who live in urban areas. Thirdly, this qualitative online data collection method does not provide an opportunity for in-depth investigation, as would be the case in face-to-face interviews. However, while the obtained written information was brief (50 words on average), our sample size was larger than those usually observed in qualitative research.<sup>42</sup> Fourthly, it is crucial to bear in mind that our questions did not investigate the participant's personal opinion. They were asked about what 'most people' think, feel and do. This formulation was chosen to deal with social desirability bias, an issue that is commonly observed in online data collection.<sup>39</sup> Consequently, this study does not provide evidence regarding how widespread those negatives views are or if participants agreed with them. Nevertheless, as researchers we assert that the first step to effectively assess stigma is to describe it through such qualitative methods. Finally, we have chosen to exclude themes that were deemed too small ( $n < 5$ ) to be significant. After all, stigma is per definition widely shared and well known among members of a culture.<sup>43</sup> However, the decision to incorporate quantitative cut-offs in qualitative analyses is controversial.<sup>71</sup> For this reason smaller themes are nonetheless presented for information (Table 3) and would lend themselves to further research.

**Data availability statement**

Data available on request.

**Funding.**

This study is funded by the French National Institute of Cancer (TABAC-2020-019).

**Declaration of Interest.**

The authors declare that they have no conflict of interest.

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**Note.** References 51-71 are available as Supplementary Material.

**Table 1.** Stigma Questions

Cognitions	What do most people think of a pregnant woman who smokes?
	How would most people describe a pregnant woman who smokes?
Emotions <sup>a</sup>	How does most people feel when they see a pregnant woman smoking?
	What emotions do most people feel when they see a pregnant woman smoking?
Behaviors <sup>b</sup>	How do some people (friends, family, colleagues, doctors...) behave with a pregnant woman who smokes?
	How do some people (friends, family, colleagues, doctors...) react to a pregnant woman who smokes?
<b>Note.</b> <sup>a</sup> . Help displayed. “Emotions are for example: joy, fear, anger, sadness, disgust, surprise, shame...” <sup>b</sup> . Help displayed. “If you can, provide examples”	

**Table 2.** Participants Characteristics.

<b>Variables</b>	<b>M(SD) or %</b>
<b>Age</b>	30.92 (11.97)
<b>Gender</b>	
Female	60%
Male	40%
<b>Marital Status</b>	
Single	33%
Couple	34%
Married	31%
Widowed	2%
<b>Number of Children</b>	
0	68%
1	11%
2	13%
≥ 3	8%
<b>Age of the Youngest Child <sup>a</sup></b>	11.47 (9.36)
<b>Education Level</b>	
≤ High School Diploma	24%
≤ Bachelor Degree	35%
≤ Master Degree	37%
≤ PhD	4%
<b>Employment</b>	
Students	31%
Working	58%
Unemployed/At Home	9%
Retired	2%
<b>Skill Level</b>	
Students	31%
Low Qualification	31%
Medium Qualification	10%



Higher Qualification	17%
Business Owner	6%
Other or Missing	5%
<b>Personal Smoking Status</b>	
Smokers	46%
<i>Cigarettes<sup>a</sup></i>	9 (7.75)
<i>Smoking since<sup>b</sup></i>	13.11 (10.70)
Former Smokers	21%
<i>Cigarettes<sup>a</sup></i>	13.81 (10.58)
<i>Stopped since<sup>b</sup></i>	6.29 (6.80)
Non-Smokers	33%
Smoked while pregnant	11%
<b>Close Circle Smoking Status</b>	
Smokers	92%
Smoked while pregnant	45%

**Note.** N = 100. <sup>a</sup> By day. <sup>b</sup> In Years. Questions asked to participants are provided as Supplementary Material.

**Table 3.** Thematic Analysis

Dimensions	N <sup>a</sup>	% <sup>b</sup>	K <sup>c</sup>	Examples
<b>Cognitions</b>	214	28.54	.79	
Irresponsible	54	8.87	.86	"A pregnant woman who smokes is irresponsible", "A woman who is aware that she is pregnant is irresponsible to smoke", "She is not a reasonable woman"
Thoughtless and Unmindful	33	4.73	.83	"Most people would describe her as unmindful", "She acts rashly and does not weigh up the risks", "A pregnant woman who smokes can be described as unaware of the dangers"
Selfish	31	1.94	.94	"The common opinion is to criticise them for their selfishness", "Totally egocentric", "She privileges her pleasure over the smooth growth of the foetus"
Immoral	25	2.67	.99	"It's a shame", "She's a whore", "Contrary to the morals of most people", "She is not worthy to be a mother", "I think it's wrong"
Neglectful	20	2.88	.66	"She doesn't pay enough attention to her baby's health", "She cares little about her child's health and is negligent with him", "She doesn't respect her health and that of her child" ...
Dangerous	18	3.71	.80	"She puts her child in danger", "She poisons her baby"
Bad Mother	15	1.94	.63	"Bad mother", "who will not be a good mother", "future bad mother"
Addicted	12	1.40	.71	"She has addictions and maybe she also drinks", "So addicted that she is not able to stop during pregnancy"
Stupid	6	0.40	.91	"It's totally dumb", "A woman who smokes is a feeble-minded woman"
<b>Emotions</b>	232	26.18	.91	
Anger	62	5.94	.90	"Anger and outrage", "They are angry, even if they don't know her, "Probably hatred towards this woman"
Disgust	49	5.23	.62	"Most people associate tobacco with disease and impurities", "People may feel disgust towards the person"
Sadness and Pity	34	4.27	.94	"Sadness for the baby", "Sorrow for her and the baby", "Sadness for this little baby who starts very badly in life", "Others may feel sad for the baby who is being put at risk"
Incomprehension	25	3.40	.96	"They feel incomprehension", "Some people are confused about smoking during pregnancy because of the possible risks to the baby"
Shock	23	3.16	1	"It's shocking to see a pregnant woman smoking", "Shock or surprise", "Astonishment at first", "Astonishment that it still happens"
Disregard	17	1.56	.98	"Disregard for the woman", "Lack of respect", "I think people feel maybe contempt"
Fear and Worries	13	1.84	.89	"Fear for the child", "Worry and fear for her health and that of her future child"

Discomfort	9	0.78	.85	“Seeing a pregnant woman smoking triggers a feeling of embarrassment”, “A form of discomfort”
<b>Behaviours</b>	172	27.89	.72	
Inform and Persuade	52	11.39	.86	“Advise her not to smoke because it is dangerous for her and her baby”, “They would probably try to convince her to stop by informing her of the risks to the child”
Moralise and Blame	35	5.26	.87	“Moralists”, “They try to make her feel guilty”, “By lecturing her”
Judge and Disapprove	28	3.18	.76	“They allow themselves to judge”, “by disapproving”, “Some people will judge her”
Criticize and Reproach	23	4.02	.80	“They may make disparaging remarks or reproach her directly”, “Allow themselves to tell her openly what she should and shouldn’t do”
Reprimand and Aggress	12	1.10	.82	“People can be aggressive”, “People may behave badly and reprimand this woman”. “Being severe by reprimanding her”, “Clashes may happen”, “Verbally belittle her”
Support and Understand	9	1.50	.24	“Do not blame her”, “Others will be sympathetic and seek to understand why she continues to smoke”, “The companion can stop at the same time to support her”
No Reaction	8	1.03	.63	“They don’t say anything because it’s very sensitive to talk about it”, “It is not the role of friends or colleagues to interfere”, “They remain passive”
Avoid and Reject	5	0.41	.39	“Can be kept out of the way or avoided”, “Some react with disgust and move away from the person”, “I couldn’t meet here anymore because I found it so horrible”

**Note.** <sup>a</sup> Number of occurrences of the theme in the corpus. <sup>b</sup> Percentage covered by the theme in the whole corpus. <sup>c</sup> Cohen’s Kappa indicating inter-judge agreement obtained on 30% of the corpus. Themes that were dropped out (N<5) are: unstable, lack of will, social outcast, childish, disappointment, to frighten her, to gaze at her and to criticise her behind her back

**Table 4.** Standardised residuals regarding independence (chi-square) between themes and smoking status

	Non-smokers N=33	Former Smokers N=21	Smokers N=46
<b>Cognitions</b>			
Irresponsible	0.07	0.61	-0.53
Thoughtless and Unmindful	1.33	-0.59	-0.85
Selfish	-1.36	-0.81	1.95
Immoral	<b>2.01</b>	-1.48	-0.84
Neglectful	-1.38	-0.64	1.84
Dangerous	-1.88	1.12	0.99
Bad Mother	0.53	0.55	-0.94
Addicted	1.11	1.68	<b>-2.36</b>
Stupid	0.07	1.34	-1.09
<b>Emotions</b>			
Anger	-0.68	0.50	0.28
Disgust	-0.26	1.38	-0.79
Sadness and Pity	<b>2.15</b>	0.05	<b>-2.14</b>
Incomprehension	1.00	-0.18	-0.84
Shock	-1.68	1.70	0.36
Disregard	-1.28	-0.62	1.73
Fear and Worries	-1.01	0.39	0.69
Discomfort	1.73	-1.67	-0.42
<b>Behaviours</b>			
Inform and Persuade	1.62	-0.71	-1.04

Moralise and Blame	-1.95	0.42	1.59
Judge and Disapprove	-1.89	0.58	1.41
Criticise and Reproach	0.07	-1.67	1.21
Reprimand and Aggress	-0.37	0.71	-0.18
Support and Understand	0.99	-1.03	-0.19
No Reaction	<b>2.44</b>	-1.38	-1.34
Avoid and Reject	-0.06	-1.30	1.05

**Note.** Standardised residuals  $\geq 2$  are in **bold**.

Variables	Questions
<b>Age</b>	How old are you?
<b>Gender</b> Female Male	What is your gender?
<b>Marital Status</b> Single Couple Married Widowed	Which situation corresponds to you?
<b>Number of Children</b> 0 1 2 $\geq 3$	How many children do you have?
<b>Age of the Youngest Child</b>	How old is your youngest child?
<b>Education Level</b> $\leq$ High School Diploma $\leq$ Bachelor Degree $\leq$ Master Degree $\leq$ PhD	What is your level of education?
<b>Employment</b> Students Working Unemployed/At Home Retired	What is your professional situation?
<b>Skill Level</b> Students Low Qualification Medium Qualification Higher Qualification Business Owner Other or Missing	What is your professional category?
<b>Personal Smoking Status</b>	What is your situation?

Smokers	
<i>Cigarettes</i>	How many cigarettes do you smoke per day on average?
<i>Smoking since</i>	How many years have you been a smoker?
Former Smokers	
<i>Cigarettes</i>	How many cigarettes did you smoke per day on average?
<i>Stopped since</i>	When did you quit smoking?
Non-Smokers	
Smoked while pregnant	Were you a smoker during a previous pregnancy?
<hr/>	
<b>Close Circle Smoking Status</b>	Do you know any smokers in your close circle?
Smokers	In your close circle, do you know women who smoke (or who have smoked) during
Smoked while pregnant	their pregnancy?

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