

# Characteristics of Smokers Atitudes Toward Smoking. A comparison between Brazil and 17 European countries

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## INTRODUCTION

In order to make smokers quit, three barriers to effective treatment must be overcome: a health care system that does not acknowledge the need for professional treatment of nicotine addiction; inadequate training of health professionals to treat heavy smokers; and the reluctance of nicotine addicted people to look for support. (Ferry, 1999)

Since nicotine dependence is maintained by several different forces, all of them must be known in order to change the help seeking pattern of the addicted. The current pattern of smoking in the United States, for example, is strongly associated with lower income (Flint & Novotny, 1997), younger age (MMWR, 1994; MMWR, 1997), lower educational level (Zhu, Giovino, Mowery & Eriksen, 1997) and disadvantaged neighbourhood environment (Crum, Lillie-Blaton & Anthony, 1996) and also, the more addicted the smoker is, the more he exhibit traces of neuroticism and impulsivity and higher levels of stress. (Health, Madden, Slutske & Martin, 1995). This way, in order to learn how to deal with such a multifactorial behaviour, one have to know its differences in socio demographic characteristics, as well as its biological features. (Bergen & Caporaso, 1999)

In an European survey (Boyle at al., 2000) studied the characteristics of smokers attitudes towards stopping in 17 European countries (Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, Netherlands, Portugal, Spain, Sweden, United Kingdom, Russia and Poland). They interviewed 10,295 smokers age 18 or more that smoked at least one cigarette per day. The main objective of such survey was to design different policies toward smoking based on differences on smokers characteristics of each country.

The available statistical data regarding the use of tobacco worldwide and mainly in developing countries is of poor quality and there is a need for better methodology for collecting information from populations. The last published data of prevalence of smoking in Brazil dates from 1989 and states that 32,5% of the adult population are current smokers, of which 11,2 million are women and 16,7 million are men. Almost 90% of the smokers become dependent on nicotine between 5 and 19 years of age. The major concentration of smokers stays between 20 and 49 years old. (Brazilian Institute of Geography and Statistics, IBGE, 1989) However there is still no reliable information on the habits, attitudes and beliefs of Brazilian smokers as to why they smoke, how many of them wish to stop, what could make them stop, their dependency and so on. Whenever we find those data, it's important that they can be compared with data from other countries in order to make them more reliable. That is why it essential that we use, as far as possible, the same methods that were used in other surveys. In this way, we would be able to compare our policies in relation to a more developed pattern.

The main objective of the present study is to compare the characteristics of smokers' attitudes towards stopping in four major Brazilian capitals (Porto Alegre, Recife, Rio de Janeiro and São Paulo) with 17 European countries. In order to make a reliable comparison we used the same criteria used in the European survey.

## MATERIALS AND METHODS

The initial core questionnaire was developed with the input of several international experts (including Karl Fagerström, Robert West, Peter Boyle and others) and sponsored by SmithKline Beecham. It was originally prepared in English for an European survey (Boyle et al., 2000) was professionally translated into Portuguese. The main author

checked it for clarity and meaning and added a few questions. Some of the most important questions added to the questionnaire are four questions of the FNDDT which were not used in the original questionnaire for the European survey (which used only the following ones: "How many cigarettes you smoke per day?" and "How soon after wake up you light the first cigarette?" that they called Modified Fagerström Questionnaire- MFQ). For comparative reasons we will use both the FNDDT and MFQ in our results. The fieldwork was conducted by marketing research organization. The sample comprised 800 smokers randomly selected, 400 male and 400 female, aged 14 to 65 years old, 300 of which in Rio de Janeiro, 300 in Sao Paulo, 100 in Porto Alegre and 100 in Recife. A smoker was defined to be someone who had smoked at least some days in the week. Individual, face-to-face interviews were conducted using a semi-structured questionnaire. The methodology employed was based on quota sampling. Quotas were separated according to social classes, sex, occupation and age. Social classes were classified as A1, A2, B1, B2 C and D according to the IBGE. In order to ensure the end sample would broadly reflect the smoking population the figures on which these were based were drawn from unpublished data of 1998 given by SmithKline Beecham.

Each interviewer was assigned an area where to work, a number of interviews to achieve and a profile of the respondent. For example, 20 interviews could be scheduled in Copacabana with people between 14 and 65 years old who smoke at least some days in a week, 10 men and 10 women, 2 aged 14 to 18, 4 aged 18 to 34, 8 aged 35 to 54, and 6 aged 55 to 64; 1 from class A1, 2 from A2, 3 from B1, 4 from B2, 5 from C and 5 from D; and 10 who work and 10 then do not. At the conclusion of the study the data set was transferred to the Pynney Association for Statistical Analysis. The data was collected in June 1999.

As in the European survey (Boyle et al., 2000), for better understanding the smokers attitudes, we decided to classify them according to their motivation to quit and level of nicotine addiction, in four groups, described below:

Group 1- "Severely dependent. Want to Quit". Smokers who want to quit and are severely dependent, either heavy smokers ( $\geq 30$  cigarettes per day) or who smoke 10-29 cigarettes per day and smoke their first cigarettes within 30 minutes after waking.

Group 2- "Less severely dependent. Want to Quit". Smokers who want to quit and are less severely dependent, either light smokers ( $< 10$  cigarettes per day) or who smoke 10-29 cigarettes per day but smoke their first cigarettes more than 30 minutes after waking.

Group 3- "Severely dependent. Don't want to Quit". Smokers who do not want to quit and are severely dependent, either heavy smokers ( $\geq 30$  cigarettes per day) or who smoke 10-29 cigarettes per day and smoke their first cigarettes within 30 minutes after waking.

Group 4- "Less severely dependent. Don't want to Quit". Smokers who do not want to quit and are less severely dependent, either light smokers ( $< 10$  cigarettes per day) or who smoke 10-29 cigarettes per day but smoke their first cigarettes more than 30 minutes after waking.

## RESULTS

From the total of 800 smokers, 400 were men and 400 were women. The age distribution is outlined in [table 1](#). Very few of the smokers in this survey smoked more than 21 cigarettes per day. In the group who smoked 6-15 cigarettes per day, there was an over-representation of the 18 to 44 years old range ([table 2](#)) while those in the age range 45-54 reported the highest frequency of heavy smoking as shown in [figure 1](#).

**Table 1: Age distributions of smokers**

Age (years)	N	%
> 17	94	11.7
18-24	163	20.4
25-34	170	21.2
35-44	187	23.3
45-54	118	14.7
55-64	69	8.7

**Table 2: Percentage of cigarettes smoked per day according age category**

Number of cigarettes smoked per day	AGE					
	> 17	18 -24	25 - 34	35 - 44	45-54	55-64
1 – 5	45,7 %	27,6 %	21,8 %	23,9 %	17,3 %	30,9 %
6 – 10	23,6 %	20,4 %	31,6 %	33,9 %	29,3 %	21,3 %
11 - 20	30,7 %	43,1 %	46,3 %	38,9 %	51,9 %	43,4 %
21 or +	0 %	0,5 %	3,9 %	3,9 %	1,5 %	4,4 %

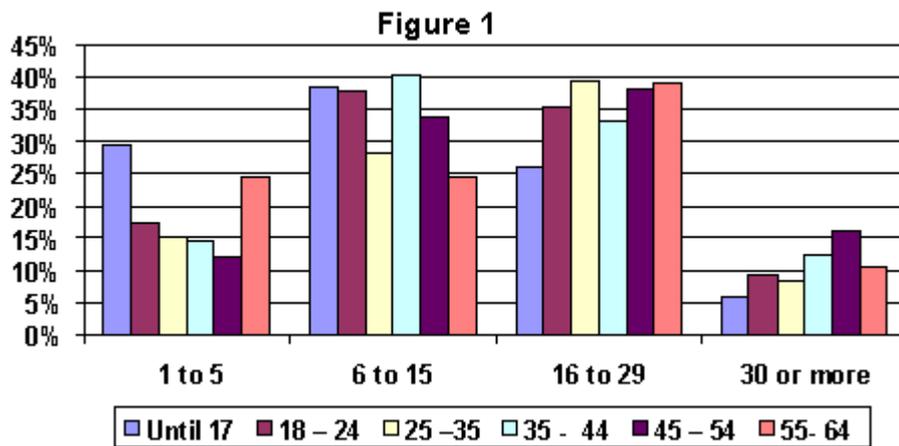


Figure 1 Distribution of the number of cigarettes smoked per day according to age category

There were more women in the category of lighter smokers (29,3%, n=117) than men (23,5%, n=94), but women were more likely to have their first cigarette within 30 minutes of waking (65,3%, n=262) compared to men (61,5%, n=246). The stronger association with time to first cigarette after waking was according to the amount smoked (figure 2). In smokers of 1-5 cigarettes per day 28,2% had the first cigarette within 30 minutes of awakening while among the heaviest smokers 92,8% smoked the first cigarette within 30 minutes of awakening.

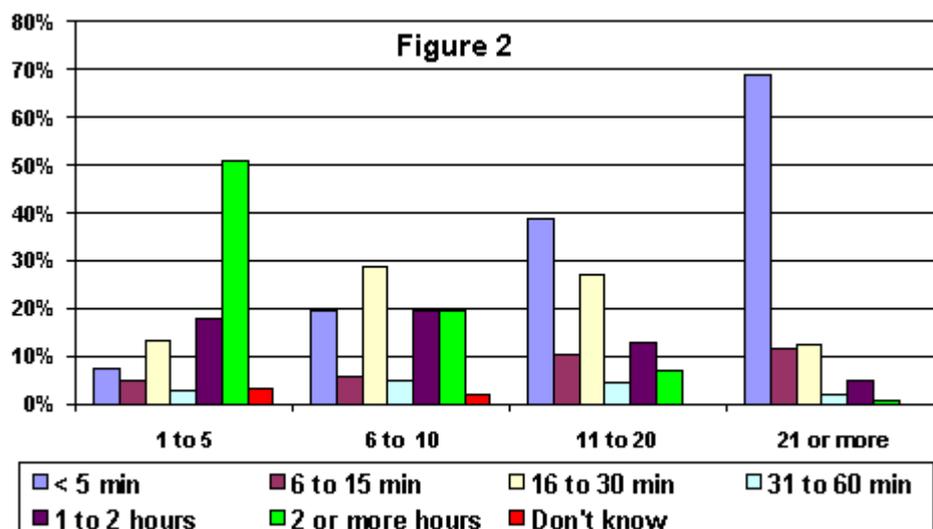


Figure 2: Distribution of the time from waking to first cigarette among 4 groups of smokers:

141 smokers of 1-5 cigarettes per day, 194 smokers of 6-10 cigarettes per day, 363 smokers of 11-20 cigarettes per day, 96 smokers of 21 or more cigarettes per day.

A majority of men (83%) wanted to stop although 2,8% were undecided. Among women 78 % wanted to stop while 3,6% were undecided at the time of interview.

There was a variation in the proportion of smokers who wanted to stop in each city. In Recife 87% of smokers questioned wished to stop, this number drops to 82,3% in Rio de Janeiro, 80,3% in Sao Paulo and 72,2% in Porto Alegre. It seem to have differences between cities. However, our data cannot be conclusive since the number of smokers interviewed in each city was small. We still need more information on this subject and this is a good field for further studies.

Those in the group who wanted to stop smoking but were severely addicted (Group 1) accounted for 355 smokers, (44,4% of the entire sample). Those who wanted to stop but were less severely addicted accounted for 286 smokers (33,7%). Those who were not motivated and who were severely addicted accounted for 87 smokers (10,9%), and those who did not want to stop and were less severely addicted account for 69 smokers (8,6% of the entire sample).

Among the two groups (1 and 2) that expressed the desire to stop there was a mean rate of 66,7 % that had a previous history of stop attempts, while only 33,4 % of the groups that did not want to stop had a previous history of quit attempt. (table 3)

**Table 3: Percentage of smokers that have tried to stop according group category**

Tried to stop	Group 1 N= 355	Group 2 N= 286	Group 3 N= 87	Group 4 N=69
Yes	66%	67,4%	34,6%	32,2%
No	34%	32,6%	65,4%	67,8%

Considering the smokers that had already tried to stop smoking, the ones that wanted to stop smoking (Groups 1 and 2) had made more previous quit attempts than the others (table 4). Among those who wanted to stop but were severely dependent, 34,1 % had previously made more then 4 stop attempts. The corresponding percentage among those who wanted to stop but were less severely dependent was 36,9 %. By contrast, among those who did not want to stop and were severely addicted only 16 % had made more than 4 stop attempts. The corresponding percentage among the less severely dependent was 21,9%.

**Table 4: Number of previous attempts to stop smoking among the ones that had tried, according to smoker's group ( desire to stop and severity of dependency).**

Number of attempts	Group 1 N= 234	Group 2 N= 192	Group 3 N= 30	Group 4 N=22
1-3	65,9%	63,2%	84%	78,2%
4-10	31,3%	35,3%	11,6%	21,9%
> 10	2,8%	1,7%	4,4%	0%

The smokers were presented with a series of statements together with a scale of 10 to record their answer. A score of 0 (zero) represented that the smoker completely disagreed with the statement and a score of 10 (ten) represented

the situation where the subject completely agreed with the statement (figure 3).

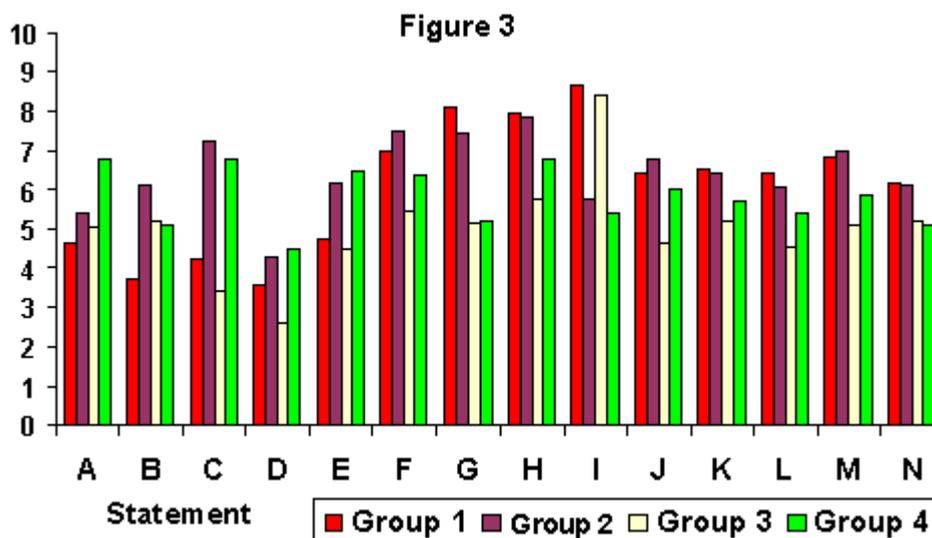


Figure 3: Mean rates of agreement on statements about smoking policies and habits by groups.

Statements:

A It's easy to stop smoking on your own, without help from a doctor or a stop-smoking product

B I hardly ever smoke when I'm alone

C I can go for hours without smoking

D I only smoke when I'm socializing with friends

E I could give up tomorrow if I wanted to

F I would prefer my partner not to smoke

G If there was a oil guaranteed to stop forever I would buy it

H I would give up tomorrow if I thought I could

I I really look forward to the first cigarette of the day

J Stronger health warnings should be required on cigarette packages

K All cigarette advertising should be banned throughout Brazil

L All cigarette promotion should be banned throughout Brazil

M Smoking is the major cause of death and disease in my country

N Cigarette companies should be held liable for illness and death attributable to other peoples

In response to the statement "I could give up smoking tomorrow if I wanted to" those who were severely dependent tended to disagree with this statement irrespective of whether they wished to stop smoking (mean 4,74 and standard variation 4,0) or not (mean 4,47 s.d. =4,13).

Those who were less addicted tended to agree more with this statement irrespective of whether they wished to stop smoking (mean 6,15 and standard variation 3,9) or not (mean 6,44 , s.d. =4,05).

Smokers who wished to quit, irrespective of their level of dependence, had the same agreement with the statement "I would give up smoking tomorrow if I thought I could" .

Those smokers more committed to quit were more likely to agree with the statement "If there was a pill guaranteed to stop smoking forever I would buy it".

Those smokers severely dependent show higher level of agreement with the statement "I really look forward to the first cigarette of the day".

Those who were less severely addicted tended to agree more with the statements : "I would stop smoking tomorrow if I wanted to" ; "I hardly ever smoke when I'm alone" and " I can go hours without a cigarette without even thinking about it."

The smokers motivated to quit were more likely to agree with the following statements : "Stronger health warnings

should be required on cigarette packages"; "All cigarette advertising should be banned throughout Brazil" ; "All cigarette promotion should be banned throughout Brazil" ; "Smoking is the major cause of death and disease in my country." ; "Cigarette companies should be held liable for illness and death attributable to other peoples' smoke" and "I prefer my partner not to smoke", irrespective of the level of addiction.

The most influential factor which could influence future efforts to stop was "Concern about exposing children, family or friends to tobacco smoke" (mean rate of agreement = 8,26) followed by, in decreasing order: "Increasing evidence concerning the health risks of smoking" ( mean rate of agreement = 7,85) "Concern that your children will start smoking because they see you do it" (7,67); " Wider availability of effective treatments and products to help people stop smoking. "(7,10); "Availability of a low cost smoking cessation service" (7,05) and "Advise from your doctor. (7,04).

In all of these questions, the agreement was higher among the two groups committed to quit smoking ([figure 4](#)).

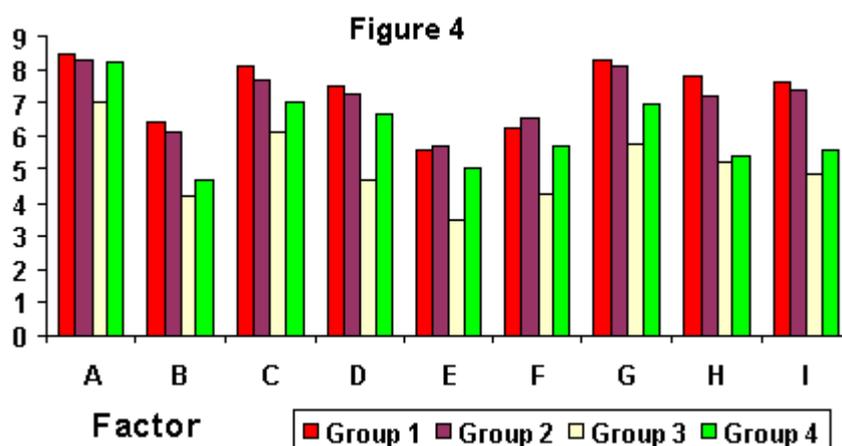


Figure 4 : Mean rates of agreement on the deal of influence of some factors on future efforts to stop smoking by groups

Factors:

A Concern about exposing your children, family and friends to tobacco smoke

B Availability of a free telephone counseling service

C Concern that your children will star smoking because they see you do it

D Advise from your doctor that you should stop smoking

E Advise from your pharmacist about the dangers of smoking

G Increasing evidences concerning health risks of smoking

H Greater availability of treatments and products with efficacy to help people stop smoking

I Availability of a low cost smoking cessation service using pharmacotherapy and psychotherapy

For all the mean scores displayed in [figures 3](#) and [4](#) the standard deviations are between 3,27 and 4,08 and the standard error ranging from 0,12 to 0,14.

Of the total sample, 47,3 % were already advised to stop smoking and there was a variation between the Groups 1 - 4, being highest among the severely dependent who want to stop and lowest among those who were less dependent and did not want to quit. The two groups (1 and 2) were more motivated to stop and more advised to quit smoking than the others ([Table 5](#)). However, only 21% of the whole sample have been counselled by their doctor about how to stop smoking. These rates are highest among the group 1 and 2, most interested in quitting.

**Table 5: Medical Advised according to group category**

Group 1 N= 355	Group 2 N= 286	Group 3 N= 87	Group 4 N=69
57 %	44,3 %	31,8 %	31,7 %

## DISCUSSION

This survey made available for the first time data about Brazilian smoker's attitude and behavior towards smoking. Since we used almost the same methodology used in surveys made before in Europe, it had been possible to compare Brazilian and European data. Although there is some differences in the methodologies of both studies (number of subjects studied and inclusion criteria- In our study a smoker is someone who smokes at least some cigarettes during the week, and in the European survey a smoker was defined as one that smokes at least one cigarette a day.), we believe the data presented here are still comparable.

From the total of the Brazilian sample, 80,5% refers that they wish to stop smoking. This seems to be a very promissory number if we compare this data with several countries in Europe (Boyle e et al., 2000) such as Germany (38%), Austria (38%) e Italy (37%) . Between the countries most motivated to quit in this continent, the percentages varies from 84% in Sweden to 65% Ireland (Figures 5 and 6).

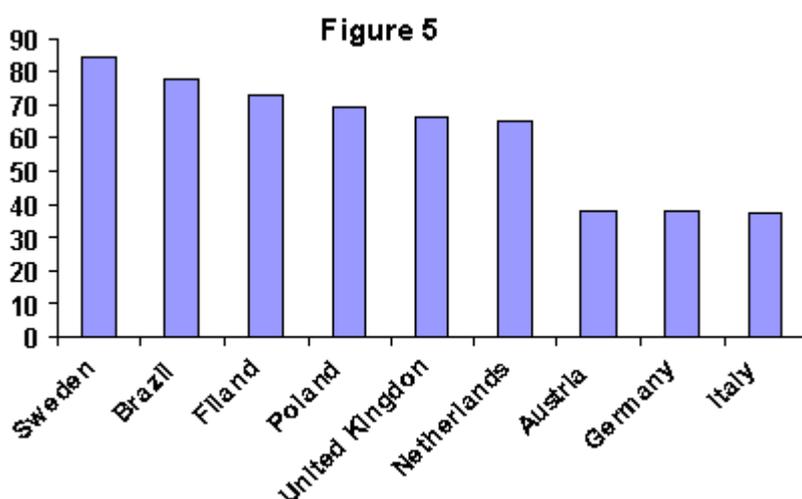


Figure 5: Percentages of male smokers who answered yes to the question "Do you want stop smoking?" by country

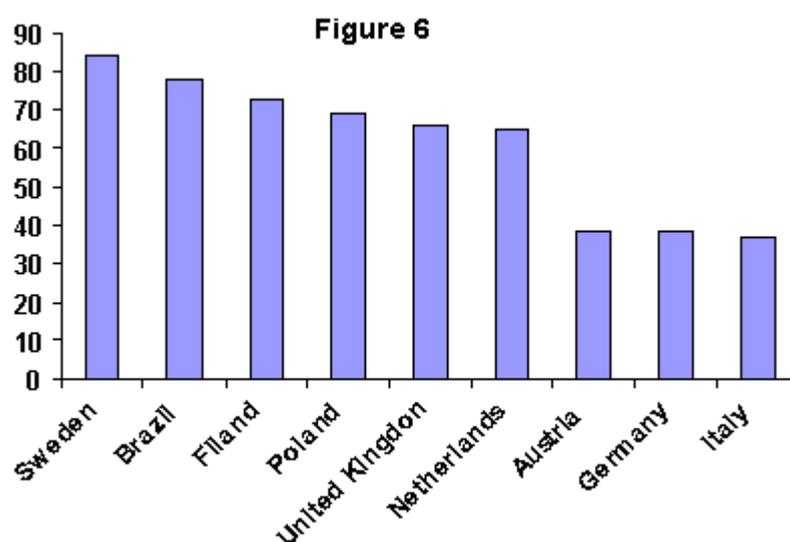


Figure 6: Percentages of female smokers who answered yes to the question "Do you want stop smoking?" by country

It is remarkable that Sweden has been the only country in Europe with higher motivation level than Brazil. This result may however have a sample bias, because the inclusion criteria of our research was to smoke at least a couple of times in the week, while in the European survey they included smokers of at least one cigarette per day.

### Is it necessary to this??

Considering this sample bias, that's understandable that very few smokers in the European survey smoked 1-5 cigarettes per day while in the Brazilian survey few smokers used to have more than 21 cigarettes per day ([table 6](#)).

**Table 6: Percentage of number of cigarettes smoked per day according to gender category.**

Gender	1-5 cigarettes	6-10 cigarettes	11-20 cigarettes	21 or + cigarettes	Mean
Male	13,2% (n=53)	25,9% (n=104)	47,4% (n=189)	13,6% (n=55)	16,65
Female	22% (n=88)	24,6% (n= 98)	43% (n=173)	10,3% (n=40)	14,84
Total	17,5% (n=141)	25,25% ( n=203)	45,2 (n=362)	11,9 (n=95)	15,74

Also the European survey showed a larger range of heavy smoking (35-65 years old) than the Brazilian one (45-54 years old) ([table 2](#)). In opposite of what happened in Europe women in Brazil are more likely to smoke their first cigarette within 30 minutes awaking than man. ([table 7](#)) This data shows that Brazilian women seems to be more addicted than the European ones. This might happen because Brazilian women have lower educational level than European women. (Zhu,, Giovino, Mowery & Eriksen, 1997). Many of the Brazilian women are house wives.

**Table 7 : Percentage of smokers lightning their first cigarette within 30 minutes of awaking by gender**

Gender	Europe	Brazil
Male	60,0%	61,3%
Female	51,0%	65,3

In the Brazilian survey there was an over-representation in groups 1 and 2 when compared to Europe ([table 8](#)). That data can be explained by the fact that more Brazilian smokers (80,5%) want to quit (83% of male and 78 % of female). While in Europe, only 57 % wish to stop (54% of male and 60% of female). It's also interesting that Brazilian smokers had made more attempts to quit than the European ones, probably because of Brazilian higher levels of motivation to quit.

**Table 8 : Percentages of smokers according to desire to stop and severity of dependency in Brazil and e Europe**

Country	Group 1	Group 2	Group 3	Group 4
Brazil	44,4%	33,7%	10,9%	8,6%
Europe	31,2%	25,0%	24,0%	9,0%

If we consider that Brazilian smokers tended to agree more with the statement "Stronger health warnings should be required on cigarette packages" and related this with the fact that the second most influential factor which could influence future efforts to stop is "increasing evidence concerning the health risks of smoking" (figures 3 and 4), it seems to show that Brazilian population needs more information about the harmful consequences of cigarette smoking. Maybe it's because Brazil is in a initial stage of awareness about smoking risks if compared to Europe.

Other factor that seemed to be influential in the decision to quit smoking among Brazilian smokers but not in the European ones was the " Wider availability of effective treatments and products to help people stop smoking." It makes sense if we consider the Brazilian precarious health system . The Brazilian population is much more unassisted.

In Brazil, the doctors advise more the most dependent and committed to quit smokers. Perhaps the reason why those smokers show a highest level of motivation to quit is because they received more doctor's advice . Although Brazilian smokers are more advised than European's, very few doctors show their patients how to quit (table 9a, 9b).

**Table 9a. Doctor's counselling: Percentages responding "yes" by country.**

Country	Group 1	Group 2	Group 3	Group 4
Austria	17,3	8,0	12,7	4,5
Belgium	24,2	12,6	14,8	6,7
Brazil	57,0	44,3	31,8	31,7
Demark	8,5	7,9	6,3	2,6
Finland	21,3	14,0	20,3	13,2
France	30,0	16,0	25,5	7,2
Germany	25,0	19,0	5,2	8,2
Greece	10,6	5,3	5,5	7,9
Ireland	12,6	4,3	6,4	5,3
Italy	18,3	7,6	7,2	7,1
Luxembourg	23,7	12,4	17,7	13,1
Netherlands	20,5	8,5	10,5	6,1
Poland	19,3	10,7	8,3	7,8
Portugal	15,1	15,8	9,2	5,6
Spain	13,9	10,6	10,5	6,4
Sweden	13,9	8,9	14,0	2,2
UK	10,2	2,9	4,4	1,4
Russia	9,0	6,2	6,0	3,6

**Table 9b. Doctor's advice: Percentages responding "yes" by country.**

Country	Group 1	Group 2	Group 3	Group 4
Austria	40,6	31,9	25,0	11,3
Belgium	41,4	25,2	55,3	15,2
Brazil	21,8	21,9	20,7	8,0
Demark	36,6	20,6	33,0	16,7
Finland	51,1	40,4	51,3	34,2
France	62,6	42,3	43,6	16,5
Germany	46,0	34,3	20,9	21,4
Greece	43,6	28,1	25,8	28,9
Ireland	41,3	29,8	1,4	21,3
Italy	51,9	36,1	28,7	17,9
Luxembourg	51,8	31,7	37,3	25,1
Netherlands	42,5	25,4	30,2	23,2
Poland	49,2	33,5	40,7	27,3
Portugal	40,4	35,1	30,6	16,7
Spain	43,0	25,3	33,1	12,6
Sweden	48,0	34,6	38,0	15,2
UK	50,4	36,0	43,1	24,3
Russia	39,5	31,5	28,4	17,1

In order to try to compare the anti smoking climate in Brazil with the European countries and Poland the main author decided to use an anti smoking barometer previously formed by an expert panel which consisted of each country owner of the Smoker Survey, but Brazil ( Fagestrom, Boyle, Kunze, Zatonski, 2000). They were asked to help in creating an ASC barometer by rank ordering the 21 questions presented in the questionnaire. They were informed that the five best-ranked questions were to constitute the barometer. The five most ranked questions were in order, smoking is the major cause of death an disease in my country; do you want stop smoking at some time in the future; the government should take more action to help people to stop smoking; have you ever made a serious attempt to stop smoking; restaurants and others public places should provide smoke-free areas.)

For three of the questions smoking is the major cause of death an disease in my country; the government should take more action to help people to stop smoking and restaurants and others public places should be smoke-free, the subjects responded on a 10 point scale as how much they agreed to the statement. The remaining two questions do you want stop smoking at some time in the future and have you ever made a serious attempt to stop smoking, were responded to by yes or no alternatives. The country score were the percent that answered yes. The total barometer score for a country was generated by adding up each question scores.

According to this barometer, Brazil was the country with the highest score (378), compared with 258 in Austria ([table 10](#)).

**Table 10 : Raw score for each country and question and total score ( anti smoking barometer).**

Number	Country	Major cause of death	Want to stop	Government more action	Quit attempt	Smoke free places	Total score
1	Brazil	66	80	82	60	90	378
2	Poland	59	69	73	76	91	368
3	Sweden	49	84	55	80	90	358
4	Greece	59	72	74	49	86	340
5	Ireland	63	62	72	55	86	338
6	UK	55	66	64	67	81	333
7	Spain	55	56	71	44	84	310
8	Demark	76	45	33	68	84	306
9	Netherlands	41	65	45	75	80	306
10	France	49	59	64	51	82	305
11	Filand	36	73	47	63	84	303
12	Belgium	45	56	61	53	85	300
13	Italy	54	37	66	49	85	291
14	Luxembourg	37	43	63	58	85	286
15	Portugal	52	43	66	41	82	284
16	Germany	43	38	61	43	81	266
17	Austria	41	38	61	38	80	258

Brazilian government seems to be the one that most act on behalf of the smoker. The most notable is that this country claims by far more than the others that the government should be more active in helping people quit smoking. Also, after Sweden, Brazil was the country most motivated to stop smoking. It is a remarkable data, because this phenomena occurs in a country where the price of the pack of the cigarette is low, we still sell cigarettes to minors , and we still allow advertisements in television. It looks like even with this obstacles, Brazil have done a good job in the anti-tobacco fight.

Even though we have some methodological limitations, the present study shows us the Brazilian smoker's profile Further studies are necessary.

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