CHARACTERISTICS OF SMOKERS ATITUDES TOWARDS SMOKING

A comparison between Brazilian and European smokers

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Tobacco consumption is a major cause of death and disease, and quitting smoking is the most important thing smokers can do in order to benefit their health, improve the quality of life and increase life expectancy. In 1989, 32.5% of the Brazilian population smoked, however, no data is available about how many of them are willing to stop and which factors might influence the majority to make such a decision.

Objective: *Compare habits, attitudes and believes of smokers in four major cities in Brazil with what was described for 17 European countries.*

Methods: *Eight hundred smokers were interviewed in four major cities in Brazil (Rio de Janeiro, São Paulo, Porto Alegre and Recife). The methodology employed was based on quota sampling. Quotas were separated according to social class, gender, occupation and age.*

Results: *Brazil, when compared to European countries, seems to have one of the highest degrees of awareness on the antitobacco fight.*

Conclusion: *For the first time, data on habits, attitudes and believes of smokers were collected in Brazil and compared with information from other countries. Orientation for new public health policies is provided, what may encourage a larger amount of population to quit smoking and consequently decrease the mortality and morbidity in this country.*

Introduction

In order to assist smokers to quit, three barriers to effective treatment must be overcome: 1) a health care system that does not acknowledge the need for professional treatment of nicotine addiction; 2) inadequate training of health professionals to treat nicotine addicts; and 3) the reluctance of nicotine addicts to look for assistance (Ferry, 1999).

Since smoking is sustained by several different factors, the knowledge of them increases possibilities of helping smokers stop. 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). Moreover, nicotine addiction is associated with higher levels of stress and neuroticism and impulsivity traits (Health, Madden, Slutske & Martin, 1995). Thus, in order to learn how to deal with such a multifactorial behaviour, there is a need to collect as much information as possible about the differences in socio-demographic characteristics, as well as its biological features (Bergen & Caporaso, 1999).

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

In view of the fact that the available statistical data regarding the tobacco use worldwide, specifically in developing countries, holds deficient quality, there is a need for more accurate methodologies for collecting information from populations. The last published data about smoking prevalence in Brazil, which dates from 1989, showed that 32.5% of the adult population were current smokers (11.2 million women and 16.7 million men). In addition, almost 90% of smokers started to smoke between 5 and 19

years of age and most smokers were 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 believes of Brazilian smokers, such as why they smoke, how many of them are willing to stop, what kind of assistance they would like to have, how addicted they are and so on. If such information can be assessed, it would be important to have it compared with data from other countries, for the purpose of making them more understandable. This is the reason why it was considered essential to use, as far as possible, the same methods that were employed in other surveys.

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

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 GlaxoSmithKline (formerly SmithKline Beecham). It was originally prepared in English for an European survey (Boyle *et al.*, 2000) and was professionally translated into Portuguese. The principal author checked it up on clarity and meaning and added a few questions, mainly four questions from the Fagerström Test for Nicotine Dependence (FTND)[1]. For comparative reasons both the FTND and the Modified Fagerström Questionnaire (MFQ) were used in this study. The fieldwork was conducted by a marketing research organisation. The sample comprised 800 randomly selected smokers, 400 males and 400 females, aged 14 to 65 years old, 300 of which in Rio de Janeiro, 300 in São Paulo, 100 in Porto Alegre and 100 in Recife. A smoker was defined as someone who 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

class, gender, occupation and age. Social classes were classified as A1, A2, B1, B2, C and D, according to the IBGE. In order to ensure that the final sample would broadly reflect the smoking population, the figures on which these were based were drawn from unpublished data from 1998 provided by GlaxoSmithKline.

Each interviewer was assigned an area to work, a number of interviews to achieve and profiles of the potential respondents. For example, 20 interviews could be scheduled in Copacabana (Rio de Janeiro) with people between 14 and 65 years old who smoked at least some days in a week, 10 men and 10 women, two aged 14 to 18, four aged 18 to 34, eight aged 35 to 54, and six aged 55 to 64; one from class A1, two from A2, three from B1, four from B2, five from C and five from D; and 10 who worked and 10 that did not. At the conclusion of the study the data were submitted to the Pinney Associates for statistical analysis. The data were collected in June 1999.

As in the European survey (Boyle *et al*., 2000), for better understanding of the smokers' attitudes, they were classified in four groups, according to their motivation to quit and level of nicotine addiction, as described below:

Group 1 – "Severely dependent. Want to Quit". Smokers who want to quit and are severely dependent, either heavy smokers (≥ 30 cigarettes per day) or those 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 those 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 (≥ 30 cigarettes per day) or those 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

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[1] The European Survey used only the following questions: "How many cigarettes do you smoke per day?" and "How soon after waking up do you light up the first cigarette?"

day) or those 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 smokers in this survey smoked 21 or more cigarettes per day (11.9%). In the group who smoked 6-15 cigarettes per day, there was an overrepresentation of the 18 to 44 years old range (*Table 2*), while smokers in the age range of 45 to 54 reported the highest frequency of heavy smoking, as shown in *Figure 1*. In terms of absolute cigarette consumption, respondents of different ages smoked at varying rates (p=0.002), whereas participants less than 18 years old smoked fewer cigarettes (11.8, s.d.=8.5).

Insert figure 1 around here

Insert table1 around here

Insert table2 around here

In smokers of 1-5 cigarettes per day, 26% had the first cigarette within 30 minutes of waking, while among the heaviest smokers this percentage rose to 93% (p<0.0001).
Those in the group who wanted to stop smoking but were severely addicted (Group 1) counted up 358 smokers (45% of the entire sample). Those who wanted to stop but were less severely addicted accounted for 285 smokers (36%). Those who were not motivated to quit and were severely addicted accounted for 87 smokers (11%), and those who did not want to stop and were less severely addicted accounted for 69 smokers (9%) (see *Table 3*).

Insert table 3 around here

Among those who wanted to stop, 66% had attempted at least once before, while only 36% of those not willing to quit had previously tried to (p<0.0001; see *Table 4*).

Insert *table 4* around here

In order to evaluate smokers' attitudes and believes, they were presented with a series of statements together with a scale of 0-10 to record their answer. A score of 0 (zero) indicated the smoker completely disagreed with the statement and a score of 10 (ten) represented the situation where the subject completely agreed with the statement (see *Figure 2*).

Insert *figure 2* around here

In response to the statement "I could give up smoking tomorrow if I wanted to", those who were severely dependent tended to show disagreement irrespective of whether they wished to stop smoking (mean 4.78, s.d.=4.0) or not (mean 4.47, s.d.=4.1), whereas those who were less addicted tended to agree more with this statement no matter whether they wished to stop smoking (mean 6.15, s.d.=4.0) or not (mean 6.44, s.d.=4.2). This difference between the severely and the less dependent smokers was statistically significant ($t=4.6$, $p<0.0001$).

Smokers who wished to quit, irrespective of their level of dependence, did not differ on agreement with the statement "I would give up smoking tomorrow if I thought I could" (7.92, s.d.=3.4 and 7.82, s.d.=3.5; $p=0.72$).PROCURAR TABELA ESPECIFICANDO GRUPO A QUE CORESPONDEM OS DADOS A different situation was found in the groups not willing to stop smoking, among who the addiction status interfered with agreement scores as regards the statement (5.77, s.d.=4.2 and 6.78, s.d.=3.9, for the severely and less dependent smokers with no desire to quit, respectively; $t=5.0$, $p<0.0001$).

Those smokers more inclined to quit were more likely to agree with the statement "If there was a pill guaranteed to stop smoking forever I would buy it" (8.08, s.d.=3.4 and 7.44, s.d.=3.8; $t=7.7$, $p<0.0001$). PROCURAR A QUE GRUPO CORRESPONDEM Smokers who indicated they did not want to quit had less agreement (5.17, s.d.=4.1 and 5.18, s.d.=4.4). VERIFICAR SE P<0,001 RELACIONA-SE A COMPARAÇAO ENTRE OS INCLINED TO QUIT X NOT INCLINED

The smokers motivated to quit, as compared to those not willing to quit, were more likely to agree with the following statements, irrespective of the level of addiction

($p \leq 0.04$ for all comparisons): “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”.

The most influential factors which smokers said would influence their future efforts to stop were, in decreasing order, “Concern about exposing children, family or friends to tobacco smoke” (8.26, expressed as mean rate of agreement); “Increasing evidence concerning the health risks of smoking” (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 inclined to quit smoking. (*Figure 3*; $p \leq 0.004$, for all comparisons between those wanting to quit v. those not wanting to quit). For all the mean scores displayed in *Figures 2* and *3* the standard deviations were between 2.83 and 4.40 and the standard error ranged from 0.15 to 0.53.

Insert *figure 3* around here

Of the total sample, 47% had already been advised to stop smoking, although there was a variation between the groups 1-4 ($p<0.0001$), in that the severely dependent who wanted to stop had been the most frequently advised group (56.5%), while among those who were less dependent and did not want to quit the percentage advised to quit was lower (32%). The severely dependent smokers desiring to stop were more likely to had had a doctor advise them to quit than both groups that were not willing to quit ($p<0.0001$, for both comparisons). The less dependent smokers desiring to quit were also more likely to had received advice to quit than group 3 ($p=0.04$) and group 4, despite the last difference only approaching statistical significance ($p=0.06$; see *Table 4*). However, only 21.0% of the whole sample had been counselled by their doctor about how to stop smoking.

Insert *table 4* around here

Insert *table 5* around here

In order to try to compare the anti-smoking climate (ASC) in Brazil with that of the European countries and Poland COLOCO AND POLAND???, the authors decided to use an anti-smoking barometer previously formed by an expert panel which consisted of owners of the Smoker Survey from each country, but Brazil (Fagerstrom, Boyle, Kunze, Zatonski, 2000). They were asked to help an ASC barometer by rank ordering the 21 questions presented in the questionnaire and were informed that the five most ranked questions were to constitute the barometer. The five most ranked questions were, in order, INCREASING OR DECREASING ORDER???"smoking is the major cause of death and 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 answered on a 10-point scale regarding to how much they agreed with the statement (multiplied by 10 so that the range was 0-100). The two remaining questions – "do you want stop smoking at some time in the future" and "have you ever made a serious attempt to stop smoking" – were answered as "yes" or "no" alternatives. The country score comprised the percentage that answered yes. The total barometer score for a country was generated by adding up scores for each question.

According to this barometer, Brazil was the country with the highest score (379), whereas Austria had the lowest (258) (see *Table 6*). Furthermore, Brazil had significantly[2] higher scores than most countries ($p<0.0001$), except when compared to Ireland ($p=0.007$), Luxembourg ($p=0.015$), Poland ($p=0.033$) and Sweden ($p=0.051$), in that score differences only approached statistical significance.

Insert *table6* around here

[2] An *a priori* alpha level of 0.003 was used to assess statistical significance when accounting for multiple comparisons.

Even though there are several diversities in the cultural aspects of the European countries, the Brazilian score at the barometer was even higher than the UK, Denmark, the Netherlands, Belgium, Germany and Austria, among others. This shows that this difference is due to the anti-smoking culture in the countries and not because of different social and educational levels.

Discussion

This survey made available for the first time data about Brazilian smoker's attitude and behaviour. Since almost the same methodology of an European survey was used, it was possible to compare Brazilian and European data, in spite of some differences in the methodologies of these two studies (number of subjects studied and inclusion criteria – in this study a smoker was considered someone who smoked at least some cigarettes during the week, and in the European survey a smoker was defined as one that smoked at least one cigarette a day). **The likely impact of such a difference is that the present sample tends to be composed of less addicted smokers and therefore, probably, with more readiness to quit. Nevertheless, the data can still be comparable because the same methodology was used and at least 45% of the sample comprised severely dependent smokers.**

Also, the data collected about Brazilian smokers could be used as indicators for future policy changes. The finding that Brazilian smokers tended to agree more with the statement "Stronger health warnings should be required on cigarette packages" (7.7 and 5.5; $p<0.0001$), together with the fact that the second most influential factor which could influence future efforts to stop was "Increasing evidence concerning the health risks of smoking" (*Figures 3* and *4*), seem to be indicative that Brazilian population needs more information about the harmful consequences of cigarette smoking. Perhaps the reason lies in the fact that Brazil is found in an initial stage of awareness about smoking risks as compared to Europe. MARTIN QUESTIONOU!!!

Two of the most influential factors which could make Brazilian smokers quit were "Concern about exposing children, family and friends to tobacco smoke" (8.26)

and “Concern that your children will start smoking because they see you do it” (7.67). From these results it can be concluded that Brazilian government should take advantage of concern about loved ones in public campaigns to compel people to stop smoking.

The fourth and fifth most influential factors where related to the availability of treatments, products and services to refrain from smoking (“Wider availability of effective treatments and products to help people stop smoking” and “Availability of a low cost smoking cessation service”). If more effort would be made to increase availability of proper therapy to the Brazilian population, providing, as much as possible, free medication and smoking cessation services in public hospitals, more people could stop and, as a consequence, smoking prevalence and related morbidity and mortality would decline.

In Brazil, doctors are more likely to advise the most dependent and inclined to quit smokers (56.5% and 44.3%; 31.8% and 31.7%, for groups 2-4, respectively; $p<0.0001$ for all comparisons). Perhaps the reason why those smokers reported a higher level of motivation to quit is that they received more doctors’ advice. Although Brazilian smokers are more advised than European’s (for advised Brazilian and European smokers, respectively, $p<0.0001$), yet few doctors provide their patients concrete information on how to quit (21.0% and 10.8%, for absence and presence of doctors’ information about quitting, respectively, $p<0.0001$). Since medical advice seems to have a substantial impact on Brazilian smokers motivation, doctors should be oriented as to how to help smokers quit. MARTIN QUESTIONOU!!

Brazilian motivated smokers strongly agree with the statement “I would give up tomorrow if I thought I could”. Thus, the more these smokers are advised and counseled by their doctors, and have access to the available treatments and products, the more they would give up smoking.

A comparison between the European and the Brazilian survey

In the Brazilian sample, 81% reported that they wish to stop smoking. This is extremely encouraging when comparing this data with several countries in Europe

(Boyle *et al.*, 2000), such as Germany (38.0%; p<0.0001), Austria (37.8%; p<0.0001) and Italy (37.2%; p<0.0001). It is remarkable that Sweden has been the only country in Europe with higher motivation level than Brazil, though this difference was not statistically significant.

In addition, the European survey showed a broader age range of heavy smoking (35 to 65 years old) than the Brazilian (45 to 54 years old). In opposition to what was reported to happen in Europe, women in Brazil were more likely than men to smoke their first cigarette within 30 minutes of awaking. The percentage of Brazilian women who lit SMOKE??? their first cigarette within 30 minutes after waking was 66%, compared to 51% in European countries (p<0.0001). This data shows that Brazilian women seem to be more addicted than the European ones. This might happen because Brazilian women have lower educational levels than European women (Zhu, Giovino, Mowery & Eriksen, 1997). COMPARAR COM GRECIA, PORTUGAL, SUÉCIA – TODOS!!!!

In the Brazilian survey there was an overrepresentation in groups 1 and 2 when compared to Europe (p<0.0001). It is also interesting that Brazilian smokers had made more attempts to quit than the European (5.2 and 3.6, for Brazilian and European smokers, respectively, p<0.0001), probably because of Brazilian higher levels of motivation to quit.

Finally, Brazilian government and medical societies seemed to play an important role in acting on behalf of the smoker. It is noteworthy that this country claims by far more than the others that the government should take an active hand in helping people quit smoking. Also, after Sweden, Brazil was the country with the most individual motivation to stop smoking, what is remarkable, since this phenomenon occurs in a country where the price of the cigarette pack is low, where cigarettes are still clandestinely sold to minors, and where cigarette advertisements are still allowed in television . It appears that, even with these obstacles, Brazil has been successfully fighting against tobacco use.

Despite a few methodological limitations, the present study shows with a detailed sort of socio-demographic comparisons the Brazilian smoker's profile. Further studies are necessary.

Tables and graphics

Table 1: Age distributions of smokers

Age (years)	N	%
Up to 17	94	12
18-24	163	20
25-34	170	21
35-44	187	23
45-54	118	15
55-64	69	9

Table 2: Percentage of cigarettes smoked per day (CPD) according to age range

Age (years) /CPD	1-5	6-15	16-29	≥ 30
Up to 17	29%	38.5%	26%	6%
18-24	18%	38%	36%	9%
25-34	15%	37%	39%	8%
35-44	14.5%	40%	33%	12%
45-54	12%	34%	38.0%	16%
55-64	26%	24.5%	39.0%	11%

χ^2=28.0, p=0.0218

Table 3: Percentages of smokers according to group category (desire to stop and severity of dependence)

Country	Group 1	Group 2	Group 3	Group 4
Brazil	45%	36%	11%	9%

χ^2=434.6, p < 0.0001

Table 4: Percentage of smokers that have tried to stop according to group category (desire to stop and severity of dependence)

Tried to stop	Group 1 N= 358	Group 2 N= 285	Group 3 N= 87	Group 4 N=69
Yes	66%	67%	35%	32%
No	34%	33%	65%	68%

Group 1 v. Group 2, p<0.6461
Group 1 v. Group 3, p<0.0001
Group 1 v. Group 4, p<0.0001
Group 2 v. Group 3, p<0.0001
Group 2 v. Group 4, p<0.0001
Group 3 v. Group 4, p<0.7493

Table 5: Percentage of smokers advised to stop by a doctor according to group category (desire to stop and severity of dependence)

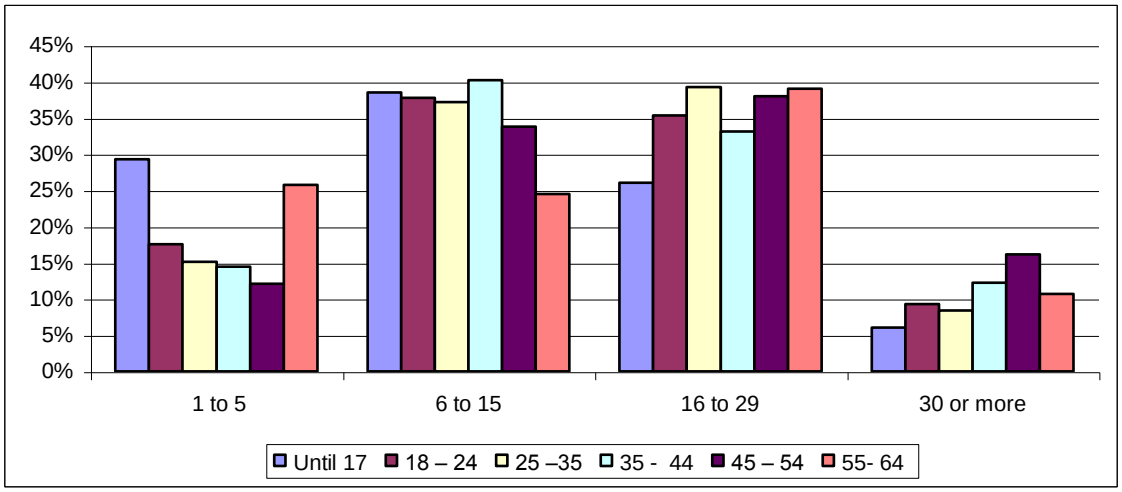
Group 1 N= 358	Group 2 N= 285	Group 3 N= 87	Group 4 N=69
56.5%	44 %	32 %	32 %

Group 1 v. Group 2 p=0.0020
Group 1 v. Group 3 p<0.0001
Group 1 v. Group 4 p=0.0002
Group 2 v. Group 3 p=0.0387
Group 2 v. Group 4 p=0.0577
Group 3 v. Group 4 p=0.9849

Table 6: 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	p-value for comparison with Brazil
1	Brazil	66	80	82	60	90	378	
2	Poland	59	69	73	76	91	368	0.033
3	Sweden	49	84	55	80	90	358	0.0512
4	Greece	59	72	74	49	86	340	<0.0001
5	Ireland	63	62	72	55	86	338	0.0066
6	UK	55	66	64	67	81	333	<0.0001

7	Spain	55	56	71	44	84	310	<0.0001
8	Demark	76	45	33	68	84	306	<0.0001
9	Netherlands	41	65	45	75	80	306	<0.0001
10	France	49	59	64	51	82	305	<0.0001
11	Filand	36	73	47	63	84	303	<0.0001
12	Belgium	45	56	61	53	85	300	<0.0001
13	Italy	54	37	66	49	85	291	<0.0001
14	Luxembourg	37	43	63	58	85	286	0.0149
15	Portugal	52	43	66	41	82	284	<0.0001
16	Germany	43	38	61	43	81	266	<0.0001
17	Austria	41	38	61	38	80	258	<0.0001



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$\chi 2=28.0$, $p=0.0218$

Figure 1: Distribution of number of cigarettes smoked per day according to age range

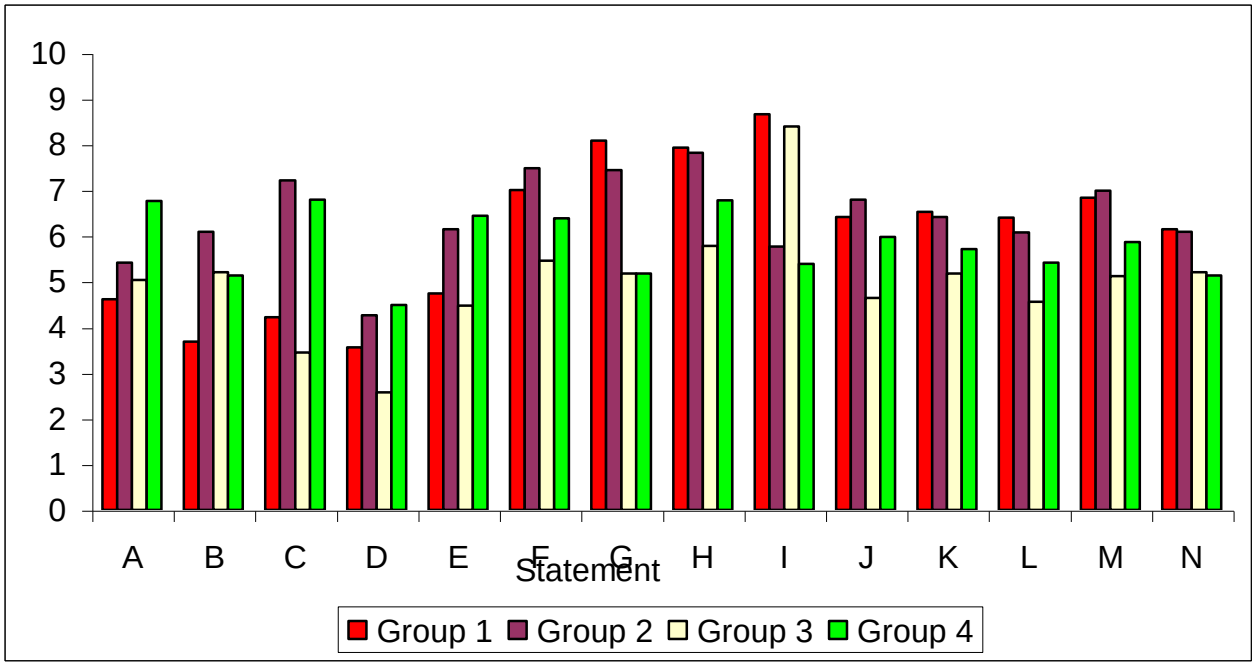

Figure 2: Mean rates of agreement on statements about smoking policies and habits by groups

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

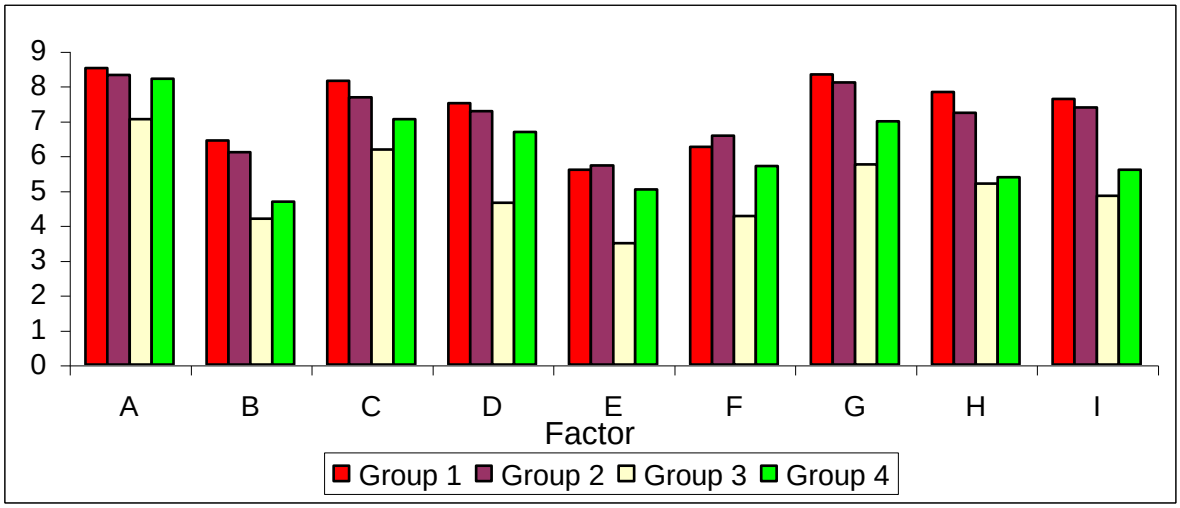

Figure 3: Mean rates of agreement on the amount of influence of some factors on future efforts to stop smoking by groups

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

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