

Socio-demographic determinants of stopping smoking from Italian population-based surveys

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The Surgeon General's Report published in 1990 in the U.S.A. is devoted to the Health Benefits of Smoking Cessation. Its major conclusions provide detailed and quantitative assessments of the beneficial impact of stopping smoking on major tobacco-related diseases, including respiratory cancers, other tobacco-related neoplasms, cardiovascular disease, nonmalignant respiratory diseases and reproductive effects, arriving at an overall estimate of a 50% decline in overall mortality in the following 15 years for a person who quits smoking before age 50¹.

However, stopping smoking is, for many individuals, a difficult achievement, requiring information, motivation and sometimes support and assistance. It is, nonetheless, a frequent phenomenon and in selected, highly informed and motivated subgroups like British or American doctors, most of the smokers have now quitted their habit^{2,3}.

Even in the general population, cessation of smoking is not uncommon: in the United States, for instance, almost 45% people who once smoked have now stopped^{1,4}. A complex of social and cultural factors has caused a regrettable and substantial delay in quitting smoking in most southern European countries, including Italy. Nonetheless, a comparison of characteristics of ex-smokers with those of current smokers may offer interesting clues for focusing and optimising antismoking interventions. This question has been previously considered in relation to two consecutive Italian National Health Surveys^{5–8}, and is now reviewed in comparative terms and with the aim of analysing the main underlying trends.

Methods

The National Health Surveys were conducted in November 1983 and between November 1986 and April 1987 on large samples (89753 and 77155 individuals respectively), randomly selected within strata of geographical area (region), size of the municipality of residence and of the household, in order to be representative of the general Italian population.

The design and methods of these surveys have been previously described^{5–8}. Briefly, interviews were conducted by civil servants within the houses of the families identified. Participation rates were remarkably high (93% in the first survey and over 90% in the second one). Proxy interviews were admitted for subjects not present in the house.

“Ever-smokers” were subjects who reported to have smoked at least one cigarette per day for at least one year. Ratios of stopping smoking (or “quit ratios”) were computed as the ratio between ex-smokers and ever-smokers. Ratios of stopping smoking were computed for males and females aged 15 or over separately, with direct standardisation for quinquennia of age, using the total distribution of ever-smokers as standard.

Results

Table 1 gives the self-reported percentages of smoking prevalence in the two surveys according to age and sex. Overall, an appreciable decline was apparent in males aged 15 or over (from 45.6 to 40.8%), while reported smoking prevalence in females remained approximately constant around 17%. It is possible that some of the apparent decline was due to increased tendency to underreport smoking⁹, although additional information is conveyed by accurate inspection of age-specific rates. Whereas in males the declines were comparable in each subsequent age group, in females self-reported

Tab. 1. Comparison of self-reported smoking prevalence (%) according to age and sex. Italy, 1983 and 1986–87 National Health Surveys.

Age group (years)	Males		Females	
	1983	1986–87	1983	1986–87
15–24	33.3	30.6	20.1	16.2
25–34	55.7	49.8	27.0	29.6
35–44	52.7	50.0	24.4	25.1
45–54	51.7	44.4	16.3	16.2
55–64	45.8	41.4	11.5	10.4
65–74	35.0	31.0	5.9	6.5
≥ 75	25.2	21.0	3.7	2.0
Total	45.6	40.8	17.7	17.3

Tab. 2. Overall ratios of stopping smoking ("quit ratio") in each sex. Italian National Health Surveys, 1983 and 1986–87.

	1983	"Quit Ratio"	1986–87	"Quit Ratio"
	Ex smokers +/ Ever smokers		Ex smokers +/ Ever smokers	
Males	3,999/19,472	20.5%	3,717/16,033	23.2%
Females	664/7,371	9.0%	753/6,340	11.9%

+ Since at least one year.

Tab. 3. Ratios of stopping smoking (%) according to sex and age group. Italian National Health Surveys, 1983 and 1986–87.

Age group (years)	1983 Survey		1986–87 Survey	
	Males	Females	Males	Females
15–24	2.2 (52) ⁺	2.7 (39)	1.3 (24)	3.1 (32)
25–34	7.3 (254)	8.0 (161)	10.0 (295)*	10.8 (203)*
35–44	13.2 (507)	6.5 (103)	16.9 (537)*	11.0 (168)*
45–54	19.3 (701)	9.5 (104)	23.6 (672)*	10.4 (94)
55–64	31.7 (1107)	16.2 (126)	34.0 (961)*	19.5 (118)*
65–74	43.5 (844)	25.9 (77)	48.8 (779)*	30.4 (87)*
≥ 75	55.1 (534)	34.4 (52)	59.5 (449)*	47.2 (51)*

+ Numbers of ex-smokers are given in parentheses.

* $p < 0.05$ as compared to the 1983 Survey

smoking prevalence increased between age 25 and 44, was approximately stable at older ages, but fell appreciably in the younger age group (15 to 24 years). This may well suggest an important and encouraging shift in smoking acceptance among younger women.

Table 2 presents the overall "quit ratios" in two surveys. These were 20.5% for males and 9.0% for females in the 1983 survey, and rose to 23.2% and 11.9% respectively in 1986–87.

The corresponding figures in each separate decade of age from 15–24 to 75 and over are shown in Table 3. Stopping ratios were slightly higher for females than for males at younger ages (below age 35), but considerably lower in each subsequent age group, particularly in middle age. Values were higher in the most recent survey for both sexes and each subsequent age group, most of the differences in age-specific ratios being statistically significant. Table 4 considers major determinants of stopping smoking in the 1986–87 survey, and contrasts them with smoking prevalence. After standardisation for age, "quit ratios" in both sexes were directly related to education, although current smoking prevalence was inversely related to education in males, but directly associated in females. When a measure of social class, based on the subjects' occupation, was used, stopping smoking was directly associated with higher social class for females, but not for males. However, this socio-economic indicator was less consistently associated with stopping smoking, or

Tab. 4. Ratios of stopping smoking according to sex and selected variables. The 1986–87 Italian National Health Survey.

Variable	Males		Females	
	Quit Ratio + (%)	(Number of ex-smokers)	Quit Ratio + (%)	(Number of ex-smokers)
<i>Education</i>				
Primary school or less	24.9	(2197)	11.4	(262)
Middle school	27.0	(704)	13.9	(185)
High school	28.1	(604)	15.5	(240)
University	29.3	(212)	15.7	(66)
<i>Social class*</i>				
I or II (highest)	18.5	(150)	12.5	(9)
III	21.1	(1013)	11.8	(211)
IV or V (lowest)	21.1	(669)	8.1	(68)
Undefined	22.5	(1885)	11.5	(465)
<i>Geographical area</i>				
Northern Italy	25.9	(1765)	13.7	(450)
Central Italy	25.5	(871)	12.2	(171)
Southern Italy	18.9	(1081)	8.1	(132)

* Based on the head of the households' occupation

smoking prevalence, than education. In both sexes, cessation of smoking was more common in northern (and richer) areas of the country (although in females, prevalence of current smoking was higher in the North), and was positively associated with the prevalence of smoking-related chronic diseases. Smoking cessation rates were directly associated with physical leisure activity, somewhat lower among separated or divorced individuals, but absolute numbers were too small to permit any meaningful inference on marital status (data not shown).

In relation to the reasons reported for stopping smoking, about 50% of the subjects interviewed in 1983 gave the presence of one or more health conditions or symptoms as their main reason for stopping, 30% knowledge of the health consequences of smoking, only 1% the cost of cigarettes, and the remaining 18% various other or undefined reasons. These reasons differed somewhat in the two sexes and were clearly different across age groups, since smoking-related conditions were reported more frequently by males and were obviously more common in older age groups.

In the most recent survey, knowledge of the health consequences of smoking increased to 38%, while other motivations remained approximately constant, with a decline to 12.0% for other or undefined reasons.

Discussion

The major, and most discouraging, finding from these analyses of cessation of smoking in two consecutive Italian National Health Surveys is the low absolute ratio of stopping, although some positive tendencies towards increasing rates were evident between 1983 and 1987 (from 20 to 23% in males, from 9% to 12% in females). These tendencies, together with the recent fall in smoking prevalence in younger women, first observed after decades of increase¹⁰, indicate a change at least in attitudes towards reporting smoking, and hence in social acceptance of the habit in Italy.

A major methodological point in the interpretation of this work is related to the discrepancy between interview-based reporting (on which the present inferences are based) and sales data, which is now widening in Italy as well as in most developed countries. In the mid 1980s, in fact, there were simultaneously the lowest overall reported smoking prevalence of the last three decades (28.6%), and the highest sales figures ever registered (over 2.3 Kg/inhabitant aged 15 or over per year)⁹. The major problem is probably inherent in the changing attitudes towards reporting smoking, rather than attributable to the limitations of these surveys.

Since the present discussion is based on internal comparison across selected variables, this "social acceptability bias" should not have markedly influenced any of the estimates. Nonetheless, if reporting bias is different across various strata of sex, age group and other variables considered, possibly some biases have been introduced even in the comparison of these variables. In quantitative terms, however, it is difficult to imagine any such bias likely to cause differences as large as those observed between males and females, education, social class or geographical areas.

The study samples, moreover, were large and representative of the whole Italian population in terms of distribution for age, sex and region of residence. Participation rate was satisfactory, since less than 10% of the households originally sampled had to be substituted. Therefore, it is unlikely that the present findings are appreciably affected by problems of random variability or selection bias.

Although stopping smoking was still considerably less common in Italy than in the United States or most northern European countries, the determinants of cessation were in several aspects similar¹¹. Quitting was in fact associated with several socio-demographic indicators and health conditions, such as higher education and socio-economic status, residence in more developed and richer areas of the country, higher body mass index^{7,12}, and presence of smoking-related symptoms or diseases.

Further, it is certainly discouraging that the most frequent reason given for stopping was the presence of smoking-related health conditions, knowledge of

the health consequences being less frequently given (although it increased appreciably between 1983 and 1987). Other reasons (such as the cost of smoking) were practically negligible in this population.

This reflects the limited knowledge of smoking-related risks and the low price of cigarettes in Italy, and underlines the scope for action against smoking at several levels^{13,14}. The present study is intended to make a contribution to such action by describing the main recent underlying trends, and focussing on major targets for intervention. These targets are mainly women (whose stopping rates were lower than those of males in all age groups except the youngest ones, probably as a consequence of pregnancy-related motivation), and less educated individuals of both sexes, particularly from the less developed areas of the country. Other associations which emerged, such as the direct one with physical leisure activity or the inverse one with coffee consumption, are probably indirect. These may represent general indicators of favourable clustering of health habits and healthier lifestyle attitudes of subjects who stop smoking, and could be useful additional indicators for focussing intervention strategies^{7,8}.

Summary

Frequency and determinants of smoking cessation were analysed using data from two Italian National Health Surveys, conducted in 1983 and 1986–87 on samples of 89753 and 77155 individuals respectively, randomly selected within strata of region of residence, size of the municipality and of the household, in order to be representative of the general Italian population. Overall stopping ratios or "quit ratios" (i.e., ratios between ex- and ever-smokers) were 20.5% for males and 9.0% for females in the 1983 survey, and rose to 23.2 and 11.9% respectively in 1986–87. With reference to age, stopping rates were slightly higher for females than for males below age 35, but considerably higher for males in each subsequent age group, particularly in middle age. Ratios were apparently higher for the most recent survey for both sexes and each subsequent age group. After standardisation for age, "quit ratios" in both sexes were directly related with education. Cessation of smoking was more common in northern (and richer) areas of the country, and positively associated with the prevalence of smoking-related chronic diseases. The major, and most discouraging, finding from these analyses is the absolute low rate of stopping in Italy as compared to northern America or northern Europe, although some positive tendency towards increasing cessation was evident between the early and the late 1980s. These tendencies, together with some recent drops in smoking prevalence in youn-

ger women, first observed after decades of increase, indicate a change at least in attitudes towards reporting smoking, and hence social acceptance of the habit. Still, women, as well as less educated individuals of both sexes, particularly from the less developed areas of the country, remain major targets for focusing attention and intervention for smoking cessation programmes.

Résumé

L'interruption de fumer et ses déterminants socio-démographiques dans les études de population en Italie

La fréquence et les déterminants pour l'interruption de fumer ont été analysés en utilisant les données de deux études de l'Office de Statistique National Italien, menées en 1983 et en 1986–87 avec des échantillons de 89 753 et 77 155 individus respectivement, sélectionnés au hasard, dans des strates d'habitation, par région, indépendamment de la grandeur des communes et des ménages, afin qu'ils soient représentatifs de la population italienne en général. Les proportions globales d'interruption (c'est-à-dire les rapports entre les ex-fumeurs et les fumeurs de longue date) étaient de 20,5% pour les hommes et de 9,0% pour les femmes dans l'étude de 1983 et ont augmenté jusqu'à 23,2 et 11,9% respectivement en 1986–87. En ce qui concerne l'âge des personnes, les taux d'interruption étaient légèrement supérieurs chez les femmes comparés avec ceux des hommes en-dessous de 35 ans, mais considérablement plus élevés pour les hommes dans chaque groupe d'âge supérieur, spécialement dans la cinquantaine. Les proportions pour les deux sexes étaient apparemment plus élevées dans la toute dernière étude et pour chaque groupe d'âge. Après standardisation selon l'âge, les proportions d'interruption étaient directement liées au niveau d'éducation dans les deux sexes. L'interruption de fumer était plus répandue dans les régions du nord (plus riches) du pays et indéniablement associée à la prédominance de maladies chroniques dues à la fumée de tabac. Le résultat principal, et le plus décourageant, émanant de cette analyse est le fait que le taux d'interruption est indiscutablement bas en Italie, si l'on fait la comparaison avec l'Amérique du Nord ou le Nord de l'Europe, bien qu'une tendance positive envers une interruption croissante ait été évidente au début et vers la fin des années 1980. Ces tendances indiquent, tout comme une baisse récente dans la tendance à fumer chez les jeunes femmes, observée pour la première fois après des décades de croissance, un changement au moins dans les attitudes vis-à-vis de l'image attribuée à la fumée de tabac et à l'acceptation sociale de l'habitude qui en résulte. Néanmoins, les femmes, et les personnes des deux sexes ayant une éducation plus modeste, spécialement en provenance des régions les moins développées du pays, restent la cible

principale sur laquelle nous devons concentrer notre attention en intervenant avec des programmes pour l'interruption de fumer.

Zusammenfassung

Mit Rauchen aufhören: Soziodemographische Determinanten – Resultate von Populations-Studien in Italien

Wie häufig mit Rauchen aufgehört wird sowie diesbezügliche mitbestimmende Determinanten wurden anhand der Daten von zwei Nationalen Health Surveys (NHS) in Italien untersucht. Die Surveys waren 1983 und 1986/87 mit Stichprobengrößen von 89 753, resp. 77 155 durchgeführt worden. Die Stichproben waren zufällig ausgewählt worden nach Stratifizierung der Variablen Region des Wohnorts, Gemeinde- und Haushaltgrösse, um ein repräsentatives Sample der italienischen Bevölkerung untersuchen zu können. Die Raten – Probanden, die aufhörten zu rauchen – („quit ratios“, d. h. Rate zwischen Ex- und allen Rauchern) betragen bei den Männern 20% und bei den Frauen 9,0% im NHS 1983, sowie 23,2% und 11,9% in NHS 1986–87. Unter Berücksichtigung des Alters waren die entsprechenden Raten bei den unter 35jährigen Frauen etwas höher als bei den Männern. In den folgenden Alterskategorien war die entsprechende Rate bei den Männern deutlich höher, vor allem bei der Kategorie „middle age“. Die Raten waren auch sichtbar höher bei beiden Geschlechtern und jeder Alterskategorie im letzten Survey. Nach der Altersstandardisierung gab es bei beiden Geschlechtern eine „quit ratio“, die direkt mit der Erziehung/Bildung korreliert war. Mit Rauchen wurde häufiger in den nördlicheren (reicheren) Landesteilen aufgehört, wobei sich eine positive Assoziation der Prävalenz von Nikotinabusus bedingten chronischer Erkrankungen ergab. Der bedeutendste und am meisten enttäuschendste Befund der Analysen war, dass in Italien im Vergleich zu nordamerikanischen und -europäischen Ländern eine sehr niedrige Rate von Probanden gefunden wurde, die mit Rauchen aufhörte. Jedoch liessen sich auch in der italienischen Bevölkerung einige positive Tendenzen hinsichtlich dem Stop des Nikotinkonsums zwischen anfangs und Ende der 80iger Jahre finden. Diese Tendenzen sowie die Tatsache, dass seit kürzerem die Raucherprävalenz bei jüngeren Frauen abnimmt – nachdem während Dekaden eine Zunahme zu verzeichnen war – zeigen wenigstens eine Verhaltensänderung bezüglich der Angabe zu Rauchen, und somit auch möglicherweise eine Änderung der sozialen Akzeptanz des Rauchens. Trotzdem bleiben Frauen, und Frauen sowie Männer aus unteren sozialen Schichten, besonders aus weniger entwickelten Landesgebieten, die Hauptzielgruppen bezüglich Aufklärungs- und Interventionsprogrammen zur Raucherinnenentwöhnung.

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