



SMOKERS, NON-SMOKERS AND FORMER SMOKERS: EFFECTS ON HEALTH OF A REPRESENTATIVE SAMPLE OF THE ITALIAN POPULATION

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ABSTRACT

Objective: Tobacco smoke is a cause and contributory cause of many diseases that affect the respiratory and circulatory systems, according to numerous studies and research in this field. The purpose of this report is to carry out an analysis of the relationship stubborn on the health of smokers, non-smokers and former smokers, in a representative sample of the Italian population.

Methods: The analysis starts from the last survey carried out by ISTAT on the Status of health and use of health services of the Italian population, made between 2012 and 2013, analyzing a sample of 119,073 units, from which extracted the data on to adults.

Results: The research highlights, through the analysis of odds ratio (OR), the relationship between smoking and disease as smoking-related, as generic. It is also produced the incidence of these diseases by age, by analyzing more domains of study in relation to smokers and former smokers, who smoke / smoked at least 20 cigarettes per day.

Conclusions: Although in Italy the "overdue" is operational for over a decade, the number of smokers is still high, with the incidence of smoking-related diseases.

Keywords: tobacco, smoke, health, Italy, odds ratio

interviewing 49,811 families in the Italian territory, distributed in 1,429 municipalities.

The survey unit is made up of the de facto family (FF) associated with the family registry (FA) sampled. The family is in fact defined as the set of people who usually live in the same household and are related by kinship, affinity, affection or friendship.

Notice how to identify a FF are more important concepts of "residence" and "habitual residence", which is not the actual birth registration of individuals living together.

Within each FF they can be detected none, one or more families; per household means:

1. married or cohabiting couple without children or with children never married, or living with, or having children of their own;
2. a single parent with one or more children never married, or living with, or having children of their own.

The members of the family that do not meet the above requirements, are considered to be "isolated members".

The aim of the research is to analyze the recent situation of the health of Italian, in direct relationship to exposure to tobacco smoke, distinguishing between smokers, former smokers and nonsmokers.

MATERIAL AND METHODS

Of all the variables in the database of health condition and use of health services were extrapolated those related to "smoking", "age of the respondents", chronic diseases including "asthma" (also allergic, which was used as a variable control) "hypertension", "heart stroke", "other heart diseases", "stroke", "cancers", "chronic bronchitis, emphysema" and "other chronic

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INTRODUCTION

This research starts from a series of studies conducted over the years with the health risks of tobacco smoke, within which the author has recently given its own contribution^{1,3-24}.

The analysis takes into account the survey carried out by ISTAT in the period 2012 – 2013², called State of health and use of health services, which has a total sample of 119,073 units,

diseases”.

The analysis focuses on the adult population (18 years and older) for which the sample analyzed counts 99,479 units (47,324 males and 52,155 females).

The tools used in this report are attributable to odds ratio (OR), which defines the relationship of cause and effect between two factors, in this case between a risk factor and a disease. It's important to remember that the $OR = 1$ (in the case of indifference between risk factor and disease onset) > 1 (in the case in which the risk factor is at least a contributory cause in the onset of disease) < 1 (in the case in which the factor may represent a protection in relation to the disease). The OR was calculated to be in a timely manner, it is considering a confidence interval of 95%.

Since the OR can only be calculated for dichotomous character, it was decided to make these variables possibly multimodal. For example, the variable “smoking” was divided into four variables, unit among the “smokers” with “former smokers”, the “former smokers” with “never smokers”, the “smokers” with “never smokers” and finally the “smokers” with “non-smokers”, uniting among non-smokers, former smokers and never smokers, as reported in the survey.

RESULTS AND DISCUSSION

According to the survey by ISTAT, at 2013 ~ 21% of the older Italians is smoker, compared to 24% of former smokers and 55% of never-smokers. The number of smokers is substantially stable compared to the last survey (2005), but in this context press check the progress of the disease reported by the respondents, in relation to smoking.

Table 1 shows the value of OR calculated for all variables related to smoking, in relation to the above diseases.

It's easy to see that the increased exposure to diseases of the respiratory and cardio-vascular system is more prominent among smokers compared to never smokers and former smokers.

It should be noted, above all, the high propensity to heart problems for smokers, as well as the strong propensity to cancer.

In fact, the OR amounted to 4,517 for smokers who have had at least one heart attack, and

amounts to 3,018 for those who experience heart problems, compared to former smokers.

Also the high OR for smokers who experience stroke (3,524) and tumors (2,373) more than the former smokers.

Also note the values of OR for respiratory diseases (chronic bronchitis and emphysema) equal to 1,966.

A clarification must be made for allergic asthma, which presents values of the $OR < 1$, except that in the comparison former smokers / never smokers. This shows the goodness of the statistic used for analysis of the phenomenon: the presence of the $OR = 1.300$ in the comparison between former smokers and never smokers is to indicate that this disease is not linked to smoking-related phenomena, and further ensures the accuracy of the processing.

Even hypertensive phenomena are linked to tobacco smoke. In fact, $OR = 1,807$ for smokers than non-smokers, former smokers and 2,713 compared to 1,475 compared to never smokers.

A final consideration should be made for the variable “other chronic disease” that presence $OR > 1$ in both the comparison between smokers and non-smokers, both among smokers and former smokers. Unfortunately, ISTAT can not distinguish which categories of diseases creeping in that variable, which deserves a further detailed and thorough, to better understand the relationship with the tobacco smoke.

At this point, the analysis focuses on the different characteristics of the condition “smokers” and “former smokers” for the same types of the disease, in relation to smokers / former heavy smokers (consuming / consumed at least 20 cigarettes a day) for stratifying class of age.

The variables analyzed in this context are those who have experienced the values of $OR > 1$ and most high: asthma, other heart disease, cancers, heart attack, stroke, chronic bronchitis, emphysema and hypertension.

On obtained in this way two domains of study: the first related to smokers, which has 6,165 units, the second concerning former smokers, which has 8,537 units.

In table 2 are summarized the data relating to the aforesaid intersections.

Table 1 - OR for smoking and disease

	Asthma		
	Value	Confidence interval 95%	
		Lower	Top
Smokers/Non-smokers	0.985	0.929	1.043
Smokers/Former smokers	1.748	1.639	1.864
Former smokers/Never smokers	0.387	0.366	0.408
Smokers/Never smokers	0.676	0.634	0.720
	Hypertension		
Smokers/Non-smokers	1.807	1.737	1.880
Smokers/Former smokers	2.713	2.594	2.837
Former smokers/Never smokers	0.544	0.526	0.562
Smokers/Never smokers	1.475	1.415	1.537
	Other heart diseases		
Smokers/Non-smokers	2.171	2.001	2.355
Smokers/Former smokers	3.018	2.763	3.296
Former smokers/Never smokers	0.601	0.568	0.636
Smokers/Never smokers	1.814	1.667	1.975
	Cancers		
Smokers/Non-smokers	1.635	1.501	1.781
Smokers/Former smokers	2.373	2.161	2.605
Former smokers/Never smokers	0.557	0.522	0.595
Smokers/Never smokers	1.322	1.208	1.446
	Other chronic diseases		
Smokers/Non-smokers	1.011	0.933	1.096
Smokers/Former smokers	1.347	1.229	1.478
Former smokers/Never smokers	0.643	0.597	0.694
Smokers/Never smokers	0.867	0.795	0.944
	Allergic asthma		
Smokers/Non-smokers	0.860	0.765	0.967
Smokers/Former smokers	0.758	0.667	0.861
Former smokers/Never smokers	1.300	1.168	1.447
Smokers/Never smokers	0.986	0.865	1.123
	Heart stroke		
Smokers/Non-smokers	1.851	1.640	2.089
Smokers/Former smokers	4.517	3.988	5.115
Former smokers/Never smokers	0.165	0.150	0.182
Smokers/Never smokers	0.746	0.649	0.857
	Stroke		
Smokers/Non-smokers	2.343	2.009	2.732
Smokers/Former smokers	3.524	2.993	4.149
Former smokers/Never smokers	0.520	0.471	0.575
Smokers/Never smokers	1.833	1.562	2.152
	Chronic bronchitis, emphysema		
Smokers/Non-smokers	0.886	0.826	0.950
Smokers/Former smokers	1.966	1.823	2.119
Former smokers/Never smokers	0.228	0.213	0.245
Smokers/Never smokers	0.449	0.413	0.487

It is clear that, with age, increases the incidence of the diseases. Surely it age contributes to weakening the physical, then the onset of disease. However, in this case the increase of the

pathologies is higher for former smokers, compared to smokers, demonstrating that you stop smoking precisely to the onset of problems related to tobacco smoke.

Table 2 - Crossroads for age, smoking and diseases (%)

Age classes	Asthma		Other heart diseases		Cancers		Heart stroke		Chronic bronchitis, emphysema		Hyper-tension		Stroke	
	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
Smokers														
18 - 25	91.9	8.1	99.4	0.6	100.0	0.0	100.0	0.0	98.6	1.4	98.8	1.2	100.0	0.0
26 - 35	91.9	8.1	97.8	2.2	99.5	0.5	100.0	0.0	98.3	1.7	96.7	3.3	99.9	0.1
36 - 45	93.4	6.6	98.7	1.3	98.6	1.4	99.7	0.3	96.9	3.1	92.4	7.6	99.7	0.3
46 - 55	95.1	4.9	96.8	3.2	97.8	2.2	98.6	1.4	93.4	6.6	79.9	20.1	99.4	0.6
56 - 65	94.4	5.6	94.8	5.2	95.1	4.9	96.7	3.3	88.6	11.4	66.8	33.2	98.7	1.3
over 65	89.9	10.1	90.3	9.7	92.1	7.9	94.1	5.9	79.6	20.4	53.6	46.4	94.9	5.1
Former smokers														
18 - 25	81.5	18.5	100.0	0.0	100.0	0.0	100.0	0.0	98.1	1.9	98.1	1.9	100.0	0.0
26 - 35	88.2	11.8	98.7	1.3	98.7	1.3	99.7	0.3	97.4	2.6	96.6	3.4	100.0	0.0
36 - 45	86.5	13.5	96.2	3.8	98.4	1.6	98.1	1.9	96.9	3.1	88.2	11.8	99.0	1.0
46 - 55	89.5	10.5	95.7	4.3	96.5	3.5	95.1	4.9	95.2	4.8	69.7	30.3	98.7	1.3
56 - 65	91.5	8.5	90.1	9.9	92.2	7.8	90.9	9.1	92.7	7.3	53.7	46.3	97.1	2.9
over 65	86.2	13.8	80.9	19.1	87.0	13.0	84.4	15.6	77.9	22.1	40.7	59.3	92.6	7.4

The table shows the increase especially for chronic bronchitis, for cancers, heart attacks (and heart disease in general) asthma and hypertension.

The case asthma deserves special attention; In fact, for the younger age group (ex-smokers) are found the highest percentages. This shows a major weakness of the youth classes, compared to the onset of asthma, it is plausible to admit that young heavy smokers quit smoking as a result of an outbreak of that disease.

In general, it is evident that both hypertension disease that increases most cases both among smokers, both among former heavy smokers.

Among smokers hypertensives are 20.1% in the 46-55 age group, 33.2% in the 56-65 class and 46.4% in class over 65 years.

Hypertensives are in number even higher among non-smokers: in the same age group are registered, respectively, 30.3%, 46.3% and 59.3%.

CONCLUSION

Compared to the many analysis and research on the subject³⁻²⁴, the report wants to reiterate the need to increase attention in relation to tobacco smoke and to smoke disease - related, especially for Italy.

After the promulgation of the "long overdue" in Italy (l. n. 3 of 16 January 2003 and subsequent amendments), much analysis and research on the subject have been a real stop, and because it was thought that the problem was largely solved, both because many resources once used to analyze

these issues have been diverted elsewhere.

In Italy OSSFAD produces regular surveys on the incidence of smoking in the country, but little is explained and analyzed about the disease or health status of the respondent.

The research also relies on the development of Big Data, the only really useful to analyze precisely and objectively a phenomenon on a large scale as that of tobacco smoke and really generalizable to the population in the entire country.

Many analyzes and research on the subject, especially in Italy, is based on much smaller numbers and often unrepresentative of the phenomenon in question.

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