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SHORT REPORT

Self perceived health and smoking in adolescents

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While long term health consequences of smoking as cancer, cardiovascular diseases, or pulmonary diseases have been largely analysed, short term health consequences of smoking have been poorly studied, as the case of teenage smokers who are short duration smokers. Some studies, mainly from the United States and northern European countries, have shown that more absence from school, poorer self perceived health, more frequent use of medication, and more frequent contact with health services are more prevalent among adolescent smokers.^{1,2} However, in southern European countries this relation has been rarely assessed. The aim of this study was to examine the association between daily smoking among adolescents and their self perceived health, different health problems, use of medication, and use of health services.

METHODS

Data were gathered from three similar designed Spanish National Health Interview Surveys representative of the general non-institutionalised population of Spain that were conducted in 1993, 1995, and 1997 by the Spanish Ministry of Health. We pooled the data to obtain an adequate sample size. The study sample was set up by 2261 adolescents aged 16–18 years who had complete information on smoking (1215 boys and 1046 girls, only two adolescents were not included because of missing information). Adolescents were classified as daily smokers (adolescents who declare smoking at least one cigarette daily at the time of interview), and never smokers. Occasional and former smokers were not included in the analysis. Self perceived health was grouped in optimal health (very good and good) and suboptimal health (poor, bad, and very bad). From the list of long term conditions included in the surveys, the variables “suffer from allergy”, and “suffer from asthma and/or bronchitis” were

analysed. We also considered self reported consumption of some drugs (that is, medication for “cold symptoms” and use of “vitamins, minerals, and tonics”). We computed the prevalence (and 95% confidence intervals, CI) of daily cigarette smoking. Logistic regression models were fitted to estimate the odds ratios (OR) and 95% CI of self perceived health, “suffer from allergy”, “suffer from asthma/bronchitis”, use of medication, and health services utilisation according to daily cigarette smoking (daily smokers compared with never smokers). The models included age, year of survey, and educational level of the head of the household for adjustment.

RESULTS

At the time of the interview, 32.4% were 16 years old, 30.9% were 17 years old, and 36.6% of the adolescents were 18 years old. The prevalence of daily smoking was 26.0% (95%CI: 23.5% to 28.5%) among boys with an increasing trend with age: 16.2%, 26.4%, and 33.8% for those aged 16, 17, and 18 (p for trend<0.01). For girls, the prevalence of daily smoking was 22.6% (95% CI: 20.0% to 25.1%), and increased with age (15.3%, 24.9%, and 27.4% for those aged 16, 17, and 18 years, p for trend<0.01). No sex differences were found in the mean age of starting smoking (14.9 years for girls and 14.7 years for boys) and in the mean number of duration of habit (2.4 years in girls and 2.6 years in boys). The average number of cigarettes smoked was 13.3 cigarettes/day among boys and 10.1 cigarette/day among girls (p<0.01).

Daily smokers reported suboptimal self perceived health more frequently than non-smokers, in both girls (OR = 2.0, 95%CI: 1.4 to 3.0) and boys (OR = 1.8, 95%CI: 1.2 to 2.7) (table 1). Daily smoking was not associated with either “suffer from allergy” (OR = 0.7, 95%CI: 0.4 to 1.3 for boys, and OR = 1.2, 95%CI: 0.7 to 2.1 for girls) or “suffer from

Table 1 Association between daily smoking by adolescents aged 16–18 years, self reported health problems, and self reported use of health services. Spanish National Health Interview Surveys, 1993, 1995, 1997

Health problems	Boys						Girls					
	Non-smokers (n=775)		Daily smokers (n=316)		OR*	95%CI*	Non-smokers (n=679)		Daily smokers (n=236)		OR*	95%CI*
n	%	n	%	n			%	n	%			
Self reported poor health	82	10.6	57	18.1	1.8	1.2 to 2.7	90	13.2	59	25.0	2.0	1.4 to 3.0
Allergy	88	16.1	20	9.4	0.7	0.4 to 1.3	84	16.9	27	19.0	1.2	0.7 to 2.1
Asthma and/or bronchitis	23	4.2	12	5.7	1.6	0.7 to 3.5	20	4.0	10	7.0	1.5	0.6 to 3.7
Activity restriction past 15 days	105	15.1	45	16.2	1.1	0.7 to 1.7	129	20.2	48	22.4	1.2	0.8 to 1.8
Use of medication for “cold symptoms”	92	12.1	48	15.4	1.5	1.0 to 2.3	130	19.5	50	21.6	1.1	0.7 to 1.6
Use of “vitamins, minerals, or tonics”	13	1.7	7	2.3	1.4	0.5 to 3.7	24	3.6	15	6.5	1.9	1.0 to 3.8
Use of health services												
Doctor visit in the past 15 days	116	15.0	54	17.2	1.1	0.8 to 1.6	135	19.9	60	25.4	1.3	0.9 to 1.9
GP/paediatrician visit in the past 15 days	73	9.5	38	12.3	1.3	0.8 to 2.0	107	15.9	48	20.4	1.3	0.9 to 1.9
Visit other specialists	37	4.8	12	3.9	0.7	0.4 to 1.5	23	3.4	11	4.7	1.3	0.6 to 2.9
Hospitalised in the past 12 months	32	4.1	18	5.8	1.2	0.6 to 2.4	28	4.1	14	5.9	1.1	0.6 to 2.3

*Odds ratio and 95% confidence intervals, adjusted for age.

Key points

Different studies, mainly from the United States and Northern European countries, have shown the increase of somatic and psychological health problems among daily smoker adolescents. However, in Southern European countries this relation has not been assessed yet. In our population based study on Spanish male and female adolescents, daily tobacco consumption is associated with suboptimal self perceived health.

asthma and/or bronchitis" in both sexes (OR = 1.6, 95%CI: 0.7 to 3.5 for boys, and OR = 1.5, 95%CI: 0.6 to 3.7 for girls). Daily smokers were not more likely to have their activity restricted during the past 15 days than non-smokers.

Boys who smoked daily were more frequently users of medication for "cold" symptoms (OR = 1.5, 95%CI: 1.0 to 2.3), and more daily smokers girls used vitamins, minerals, or tonics (OR = 1.9, 95%CI: 1.0 to 3.8) as compared with non-smokers. In both sexes, having "contacted health services during the past 15 days" or having been "hospitalised during the past 12 months" was not associated with smoking.

DISCUSSION

Our results confirm previous findings in other populations showing that adolescent smoking is associated with suboptimal self perceived health.^{1,2} Poor self perceived health could be seen as a first step in a process of health impairment because of smoking. This could be also the reason why we did not clearly observe a more frequent use of health services among smokers, as previously described.¹

Potential study limitations have to be taken into consideration. As information was obtained from a cross sectional study it is not possible to establish whether poor self perceived health and somatic symptoms are caused by smoking or vice versa (whether poor health promotes smoking). While it is possible that young people with a more stressful way of life, with worse social adaptation, and with worse self perceived health could start to smoke early,³ the role of smoking as a cause of poor health is supported by a prospective cohort study.⁴ In this study, no information on illicit drug use, which can be associated to smoking and to suboptimal health, was available, and hence we were not able to control for it in the analysis.

In summary, smoking in adolescence is associated with suboptimal self perceived health and health problems in adolescence itself, in addition to the association of adolescent smoking with lower cessation rates, heavier smoking, longer duration of smoking, and higher nicotine dependence in

Policy implications

Short term tobacco consequences on adolescents' health might be taken into account when designing preventive strategies.

adulthood. This study shows that early interventions including information and education about short term tobacco consequences on health are necessary among adolescents.⁵

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