

Smoking behaviour among a group of adolescents. A 2-year longitudinal study



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Abstract

Aim. The aim of the study was the assessment of the changes in smoking frequency during a twoyear monitoring program among a group of adolescents.

Material and method. The 2-year longitudinal study evaluated a group of 61 schoolchildren, 13-16 years-old, enrolled in the Com4You Oral Health Promotion Program in Bucharest, Romania. The behaviour assessment was performed using a self-administered questionnaire regarding oral hygiene, diet, dental services utilisation and smoking, applied every 8 months, 4 times in total. The subjects were delivered during the program 3 oral health educational lessons using experiential learning, with different oral health-related aspects approached at each lesson and smoking was part of the last one, with the final assessment at 2 weeks after the last lesson.

Results: The frequency of smokers increased gradually from 11,5% at baseline to 41% at the end of the monitoring period. When the sample was divided by age, results showed that the increase in frequency of smokers was greater among the 15-16 years-old group, from 19,4% at baseline to 48,4% at the final assessment, who also increased with time the number of cigarettes used per day, compared to 13-14 year-olds, from 3,3% to 33,3% and who kept smoking only occasionally during the study. Moreover, boys were more attracted by smoking than girls, the increase in frequency of smokers among boys was from 12,5% at baseline to 62,5% after two years, compared to girls: from 11,5% to 33,3%.

Conclusion: in the studied group, adolescents smoked already from 13 years old, and the frequency of smokers increased fast with age, around 15 years they already smoked daily, with boys being more prone to smoke than girls.

Keywords: oral health promotion, adolescents' oral health

INTRODUCTION

Smoking is a global concern for public health since one third of global population have this harmful habit that is responsible for the death of half of the all lifetime smokers, most of them dying in their middle age [1].

Many health issues are induced or complicated by smoking, including oral diseases. Periodontal disease, oral cancer and poor wound healing are the most frequently met oral health issues associated with smoking and dentists play an important role and smoke cessation [2]. However, even if health risks of smoking are widely known, smokers find it hard to quit, despite of their will, because of the highly addictive nicotine present in cigarettes [1].

Many adults start smoking during their adolescence [3], and a report of World Health Organization and Tobacco-Free Initiative published in 2002 [4] showed that for the adolescents between the ages of 13 and 15 years the mean global frequency of current smokers was 13,9% and the frequency of those who ever smoked cigarettes was 33,3%, most of them being attracted by this habit early in life since 23,9% of teenagers declared they tried their first cigarette before the age of 10 [4]. Unfortunately, compared to adults, teenagers develop nicotine addiction after less cigarettes and less time [5]. Therefore, when aiming to reduce the prevalence of smoking in global adult population, preventing measures targeted to adolescents is mandatory.

Since smoking is a common risk factor for both general and oral diseases, promoting smoking prevention or cessation is recommended and supported by WHO either in large communities, through oral health promotion programs, or individually, in the dental offices through behaviour change counselling for a healthy lifestyle [1,2].

Aim and objectives

The aim of the present study was to assess the frequency of cigarette smokers among a group of adolescents and at what extent it changes with time, age and sex during a 2 years period.

MATERIALS AND METHODS

The 2 year-longitudinal study was developed as part of the Erasmus+ “Youth Community-Based Oral Health Learning Model” (Com4You) program, that included oral health promotion measures targeted to adolescents and that took place between 2015 and 2017. The extensive research in the afore-mentioned program enrolled at baseline 120 teenagers, 13-16 years-old, from 3 schools in Bucharest, Romania, who were divided in a test group, with 76 subjects and who received oral health education using 3 experiential learning lessons, and a control group of 44 subjects who were offered traditional learning and only 1 oral health lesson. The sample selected for the present study was part of the test group from which 13 subjects dropped out during the two years period of study and thus, the final sample was formed by 61 subjects who went through all the phases with the recurrent interventions and assessments. The assessment of the smoking behaviour was assessed using a self-administered questionnaire that included, as well, other aspects regarding oral health-related behaviour. The same questionnaire was delivered at baseline and every 8 months, 4 times in total. The 3 oral health promotion lessons were all different, each of them approaching the main topics: oral hygiene behaviour, caries-protective vs cariogenic eating habits, regular dental check-ups and professional preventive treatments, and smoking. Taking into consideration that smoking behaviour and its influence on oral health was approached in the last lesson, and that the last questionnaire was applied two weeks after this last lesson, and also that the smoking-related behaviour needs time to reverse, the influence of the

lessons on smoking avoidance or cessation among the subjects enrolled was minimal. The final sample was represented by 6 graders, thus a subgroup of 13-14 years-olds (30 subjects), and 9 graders, a subgroup of 15-16 years-olds (31 subjects). The results were analysed using age and sex as independent variables and the behaviour was analysed as evolution through all the 4 recurrent assessments as it follows: baseline (initial), at 8 months, at 16 months, and 24 months (final).

RESULTS

The mean age for the entire group was $14,52 \pm 1,44$ years. When divided by age, in the 13-14 year-olds group (30 subjects, 49,19%) the mean age was $13,10 \pm 0,30$ years and the majority was represented by 13 year-olds (90% (N=27)), while in the 15-16 year-olds group (31 subjects, 50,81%) the mean age was $15,90 \pm 0,30$ years, and the majority was represented by 16 year-olds (90,3% (N=28)). Divided by sex, boys represented 26,2%(N=16) of the entire group.

The frequency of adolescents who smoked increase constantly and rapidly during the 2 years monitoring period from 11,5% at baseline to 19,7% after 8 months, to 31,1% after 16 months and to 41% at the final assessment at 24 months. Of those who smoked, the highest percentages were of those who smoked only occasionally (except for the assessment at 8 months, when number of daily smokers was double of those who smoked occasionally). Starting with the third assessment, after 16 months of monitoring, there were observed adolescents who already increased their number of cigarettes smoked to more than 10 per day, but the frequency of these category of smokers was very low (Figure 1).

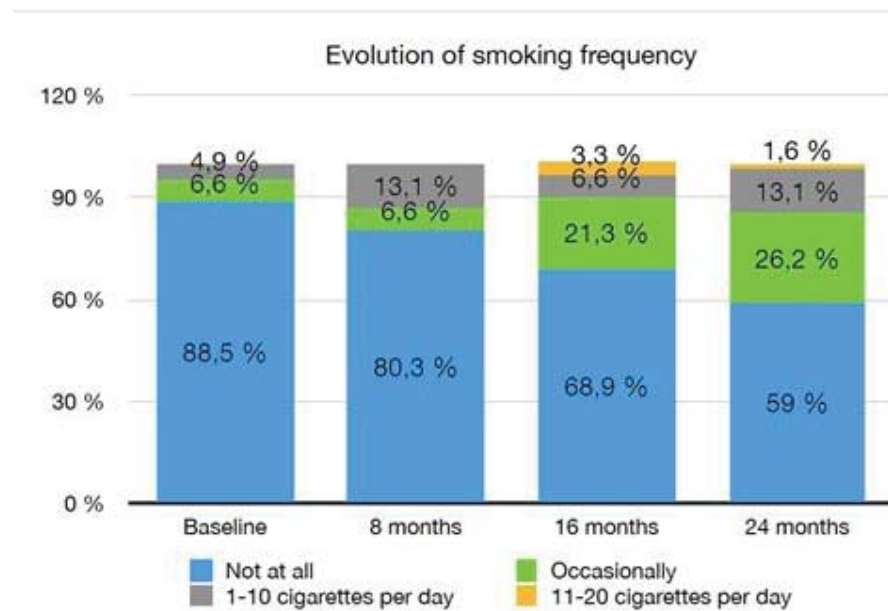


Figure 1. Evolution of smoking frequency

When the analyse was performed separately by age, the results showed a more rapid and unfavorable for adolescents who were 16 years-old at the beginning of the study (9 graders) compared to those those who were 13 years-old at the beginning of the study (6 graders).

For the 6 graders group, at baseline only 3,3% smoked, after 6 months none of the subjects declared smoking while at the 16 months assessment 13,3% smoked and at the final evaluation, at 24 months, by the time they got 15 years, already 33,3% were smokers. All of

the smoker subjects in this age group declared that cigarette smoking was only occasionally (Figure 2).

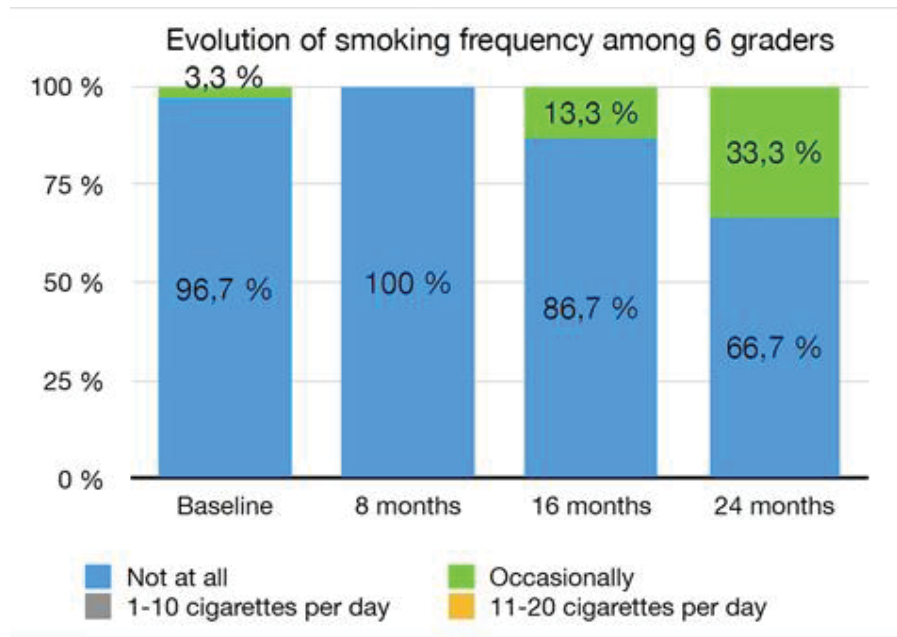


Figure 2. Evolution of smoking frequency among 13-14 year-olds

For the 9 graders, at baseline 19,4% adolescents smoked, in equal proportion daily smokers and occasionally smokers, and in only 8 months the frequency of smokers doubled, then continued increasing in the next 8 months from when the frequency stabilised until the final assessment. And not only the frequency of smokers increased, but also the frequency of cigarettes used per day. Thus, among daily smokers those who used 1 to 10 cigarettes per day were observed even from the baseline and starting with the 3rd assessment, after 16 months, there were observed adolescents who increased the number to 10-20 cigarettes per day (Figure 3).

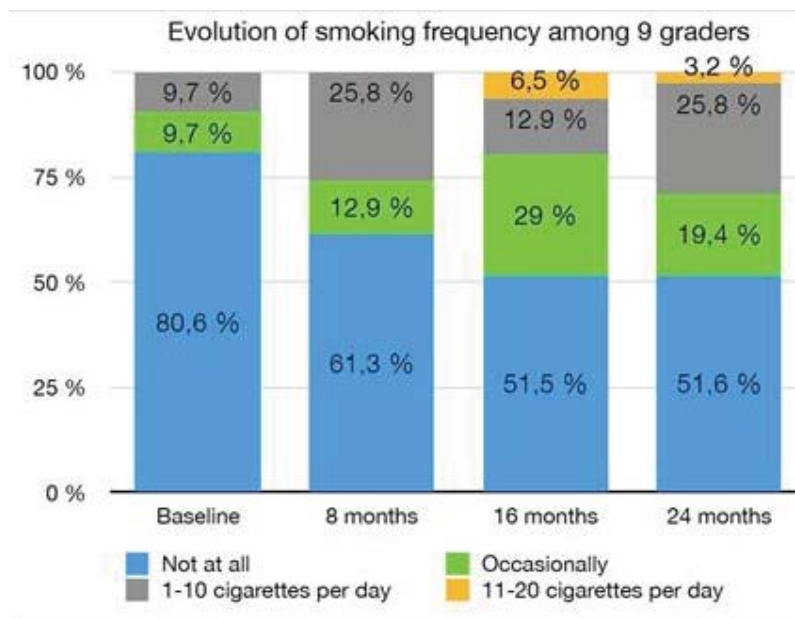


Figure 3. Evolution of smoking frequency among 15-17 year-olds

When the group was divided by sex, the results showed that the evolution was similar in the first 8 months. For girls, the increase was dramatic between the assessments at 8 months and 16 months, from 20% to 35,6%, from when the frequency stabilised until the end of the study. For boys, the increase was slow between baseline and the assessment at 16 months and sharp in the last 8 months of the study, from 18,8% to 62,5% (Figure 4).

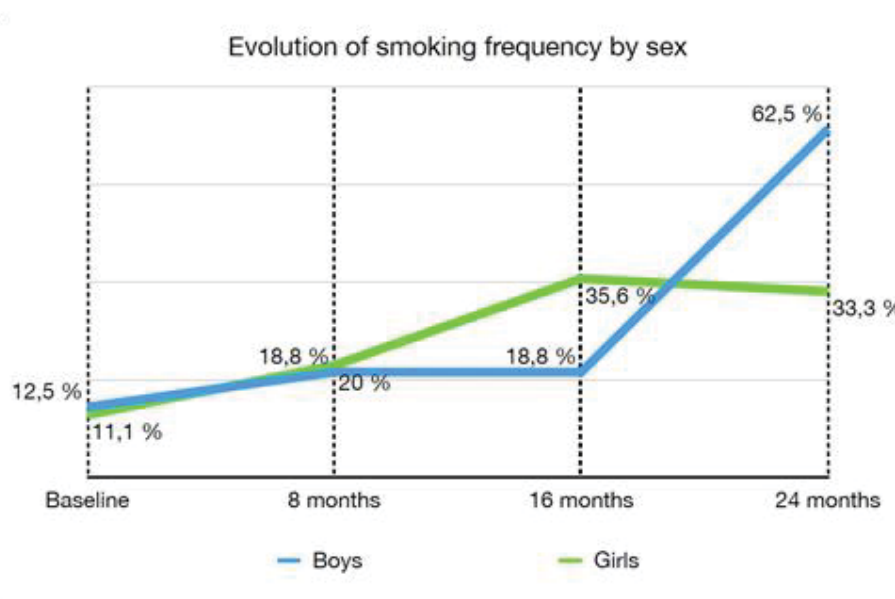


Figure 4. Evolution of smoking frequency by sex

DISCUSSIONS

The smoking behaviour among the group assessed in the present study is poorer compared to global level. In a international report of the 2013-2014 Health Behaviour in School-aged Children survey developed by WHO published in 2016, at the European level, the frequency of smokers at the age of 13 years of 4% for boys and 3% for girls, respectively at the age of 15 of 12% for boys and 11% for girls [5]. Also, in a report published by the US Department of Health and Human Services, in 2015 the frequency of cigarette smokers at the US level was 1,3% among 8 graders, 3% among 10 graders and 5,5% among 12 graders and by 2017 the frequency decreased to 0,6%, 2,2%, 4,2% respectively [6].

CONCLUSIONS

Adolescents assessed in the present study showed an improper smoking-related behaviour, at the age of 13 already 1 in 20 teenagers smoking occasionally and by the time they get 15 years one third of these teenagers having this habit. Moreover, 16 year-old adolescents already smoked daily, 1 in 10 smoking between 1 and 10 cigarettes per day and by the time they get 17 some of the adolescents smoke more than 10 cigarettes daily. In addition, boys are more prone to start smoking.

Acknowledgement

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