

# THE APPROACH OF ROMANIAN PEDIATRIC MEDICAL PROFESSIONALS TO TOBACCO CONSUMPTION DURING CHILDHOOD AND ADOLESCENCE

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## ABSTRACT

**Introduction.** The incidence of smoking is reaching alarming rates worldwide, and teenagers are the age group most susceptible to initiate smoking. There are numerous subsequent consequences, in terms of both medical complications and implicit costs. The exact situation nationwide is unknown, but interventions during pediatric age are mandatory.

**Material and methods.** The study was based on a 10-question survey applied to 371 healthcare professionals (pediatricians, family physicians, etc.). They signed an informed consent form regarding their participation in the study. The study was approved by the Ethics Committee of the Romanian Pediatric Society. The results were centralized and processed statistically.

**Results and discussions.** The majority of respondents are familiar with the notions concerning smoking and the health related consequences of this habit. More than 90% of respondents insist on matters related to smoking in their discussions with patients and their parents, seeking to identify risk elements. Smoking during pregnancy and nursing was identified in 82% of completed surveys.

**Conclusions.** The magnitude of smoking among pediatric population is alarming, placing Romania on the 4th place in Europe for the number of 13-year-old teenagers that smoke on a weekly basis. The fight against this phenomenon must be spearheaded by healthcare professionals by means of accurate and full information, with scientific and medical arguments, and by means of early detection of pathologies resulting from smoking.

**Keywords:** tobacco, children, health professionals, pediatricians, prevention

## INTRODUCTION

There are approximately 900 million smokers worldwide (721 million men, 158 million women) (1,2). Smoking accounts for more than 400,000 deaths annually in the United States of America and more than 120,000 deaths annually in Great Britain (3). Smokers live (on average) 10 years less than non-smokers.

In Romania, the prevalence of smoking during childhood is approximately 15%, the majority of smokers being teenagers. Electronic/vape/heated tobacco cigarettes are just as dangerous as classic cigarettes in terms of children's health. During adolescence, smoking is a delicate topic that requires a complex, instructive-educative and participative approach (4).

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Smoking is one of the most important preventable causes of death. In spite of the multiple methods used to prevent this behavior, the incidence of smoking is reaching alarming rates all over the world. Teenagers are the age group most susceptible to initiate smoking. The primary factor determining teenagers to start smoking is their social environment. Thus, it was proven that a teenager is more likely to start smoking if they are exposed to this factor. Adolescence is the most vulnerable age period due to the continued behavioral fluctuations and its characteristic indecisiveness. The influence of group members is essential for the teenager’s developing personality, being able to very easily determine the teenager’s decision to start smoking (2).

### RESEARCH OBJECTIVES

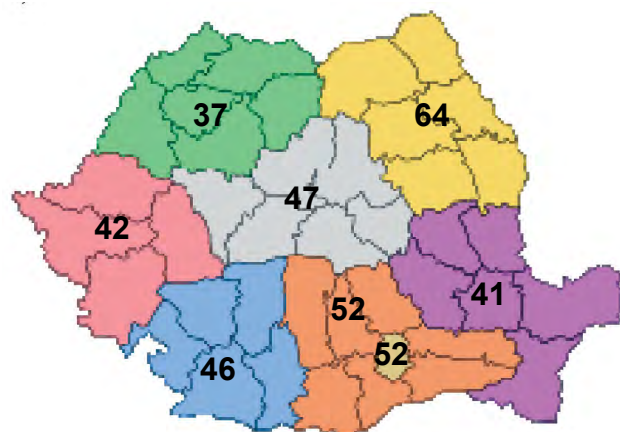
Identification of attitudes and practices of healthcare professionals concerning the prevention, detection and approach to the matter of smoking during pediatric age.

### MATERIAL AND METHOD

The study was conducted by centralizing the answers to surveys applied directly and via correspondence to a total of 371 healthcare professionals (pediatric residents, fellows and attending physicians, family physicians etc.) involved in child care. The data was collected and processed using specific software (Microsoft Excel, MedCalc 13.0).

### RESULTS

Question 1: *Your development region of provenance from Romania*



a)

Romania is divided into 8 regions of socio-economic development. Between these regions there are significant differences regarding the socio-economic aspects, including the health status of the population.

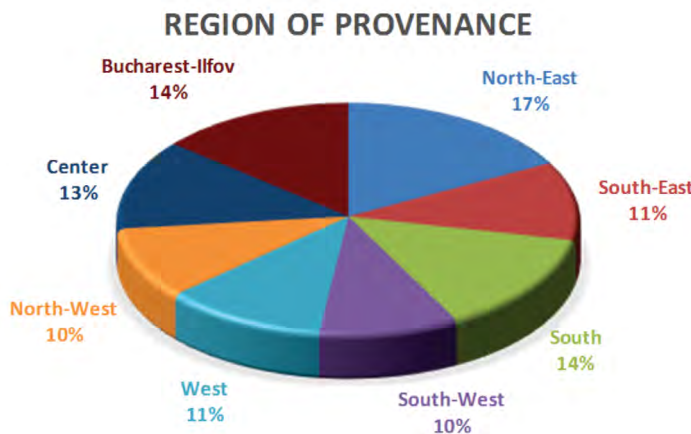
To have a better overview of the impact of smoking on the pediatric population, the survey distribution was conducted on equivalent samples of pediatric specialists. Thus, in terms of development region, participant distribution per development regions is illustrated in Figure 1 (a, b), in absolute numbers and percentages. The distribution was relatively homogeneous, therefore the answers offer an overview for the problem of smoking during pediatric age at a national level.

Question 2: *Are you a smoker?*

The question regarding the smoking status had three possible answer: “Yes”, “No” and “Used to be a smoker”. The question aimed to determine both the ratio of smokers among healthcare professionals, and that of former smokers among them that can use their personal example to try and persuade patients to quit this habit. The majority of respondents are non-smokers (80%), thus setting a personal example for their patients. Of these, 12% used to be smokers at some point in time and then quit smoking, having understood the negative effects of smoking on health.

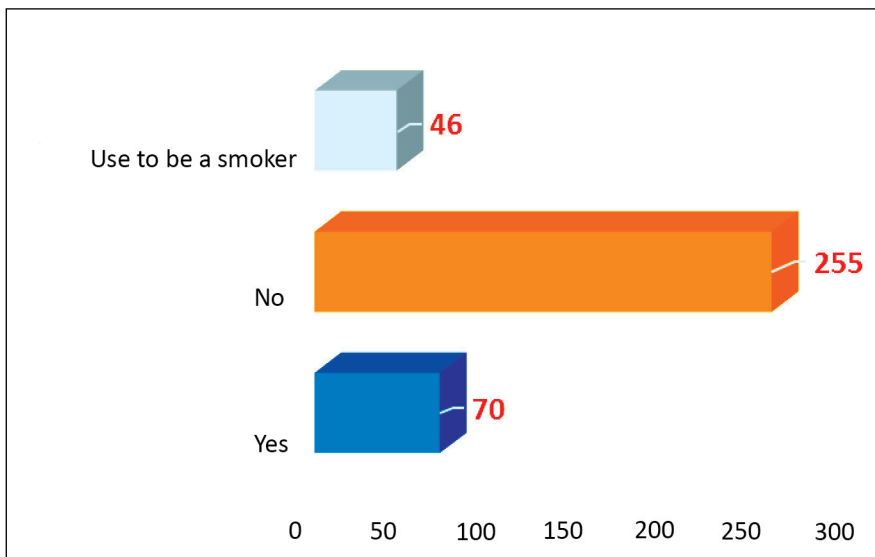
Question 3: *Specialty training level*

The involvement of young doctors (residents, fellows) and attending physicians with extensive practical experience in the fight against smoking alike is a unified strategy for tackling this phenomenon among children and young people. The survey respondents included 274 residents, 61 fellows and 36 attending physicians (Figure 3). Consequently, it is necessary to



b)

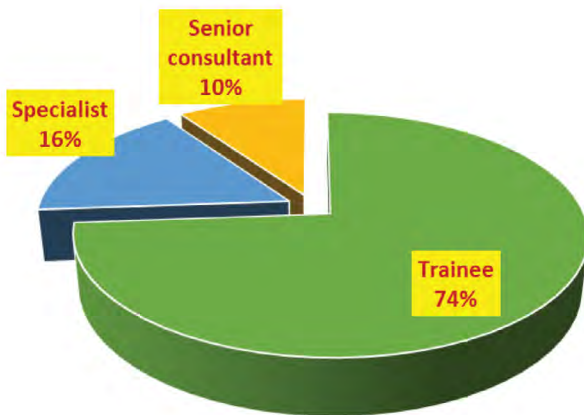
FIGURE 1. Distribution of respondents by region of provenance



**FIGURE 2.** Smoking status of respondents

get doctors of all professional levels involved, particularly young doctors, in raising awareness about the side effects of smoking in children.

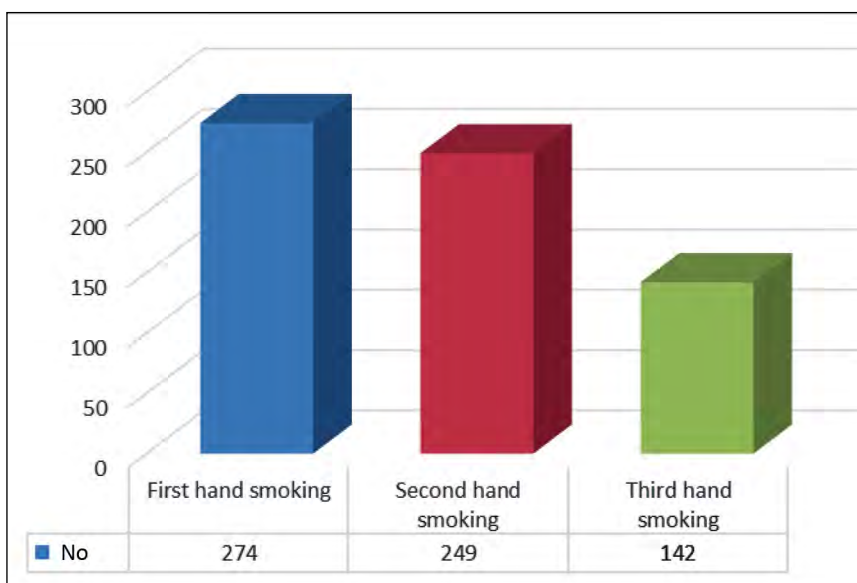
Young doctors manage more easily to approach the matter of smoking with teenagers and smoking mothers, having the advantage of being closer to their age range and perhaps by means of their own personal example. The generation gap can be an additional hurdle for fellows or attending physicians, but it is easy to overcome by means of personal experience.



**FIGURE 3.** Specialty training level

Question 4: *Which of the following notions are you familiar with: “first hand smoking”, “second hand smoking”, and/or “third hand smoking”?*

The notions of active (“first hand”) and passive (“second hand”) smoking are the most widely known by healthcare practitioners, as well as by the general public, the majority of respondents stating that they are familiar with these notions. 229 persons were not familiar with the third notion concerning the types of smoking, i.e. “third hand smoking” or contact with



**FIGURE 4.** Awareness of the notions of active and passive smoking that of contact with cigarette smoke contaminated objects or environments

cigarette smoke contaminated objects of environments (Figure 4). Approximately a third of respondents were familiar with all three notions concerning the types of smoking.

Question 5: *When taking the patient history, do you seek to get data on the parents' smoking status?*

The majority of the doctors that took the survey take patient history regarding parental smoking (98%) (Figure 5). This information is valuable in characterizing the family environment, where children pick up certain behavior patterns, or in identifying the source of respiratory pathologies in children.

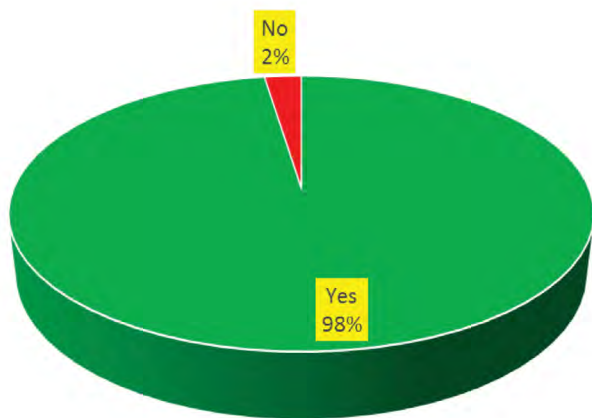


FIGURE 5. Patient history for parents' smoking status

Question 6: *When taking the patient history, do you ask older children/teenagers if they smoke?*

Patient history concerning the smoking status of pediatric patients is a delicate and difficult matter. This requires a certain tactfulness, a certain experience to the approach in order to obtain a real answer, while also preventing any harm to the patient's personality. Of the respondents, 94% are keen on ascertaining the smoking status in older children and teenagers (Figure 6).

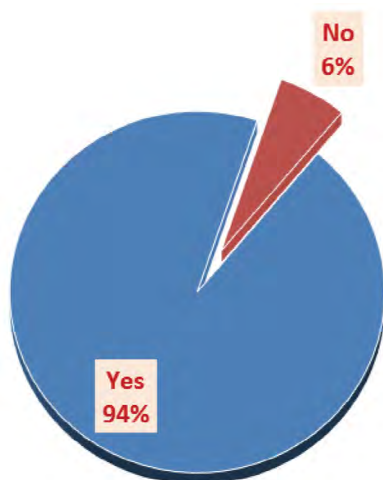


FIGURE 6. Patient history for the smoking status in children and teenagers

Question 7: *When discussing with parents, do you approach the issue of the negative effects of second hand smoking on children?*

Discussion on the risks of smoking should be approached systematically with smoking teenagers and with parents alike, so as to raise awareness about the harmful effects on health. A large ratio of young mothers smoke, and the pathologies encountered in infants oftentimes can be correlated with smoking. The majority of healthcare professionals interviewed (315 persons – 87%) stated that they approach this matter with parents and parents-to-be alike (Figure 7).

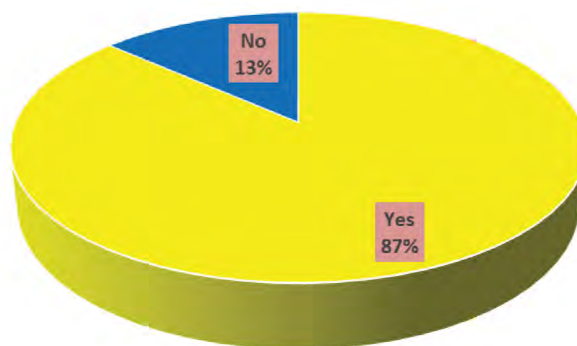


FIGURE 7. Approaching the side effects of smoking on children

Question 8: *When discussing with older children/teenagers, do you provide them with information on the negative effects of smoking, whether or not they reveal that they smoke?*

Health education must be provided at an age when the child understands and discriminates between the risks and benefits of a certain aspect, in this case those of smoking. Therefore, the correct approach to smoking, either by a doctor or a registered nurse, must be adopted within the medical act, with a focus on at-risk cases. The majority of survey respondents said they provide such information about smoking in their everyday activity (Figure 8).

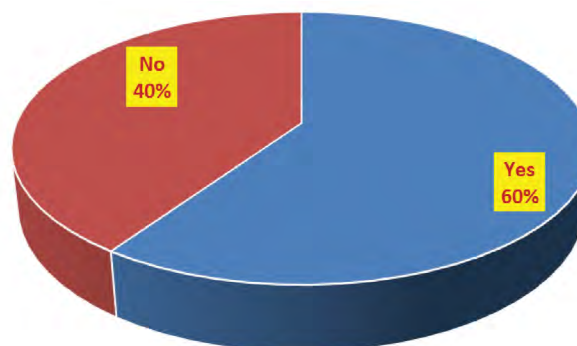


FIGURE 8. Approaching the negative effects of smoking with pediatric patients: 60% of respondents insist on this aspect in their discussions with patients

**Question 9: *What is the minimum age of a smoker in your experience?***

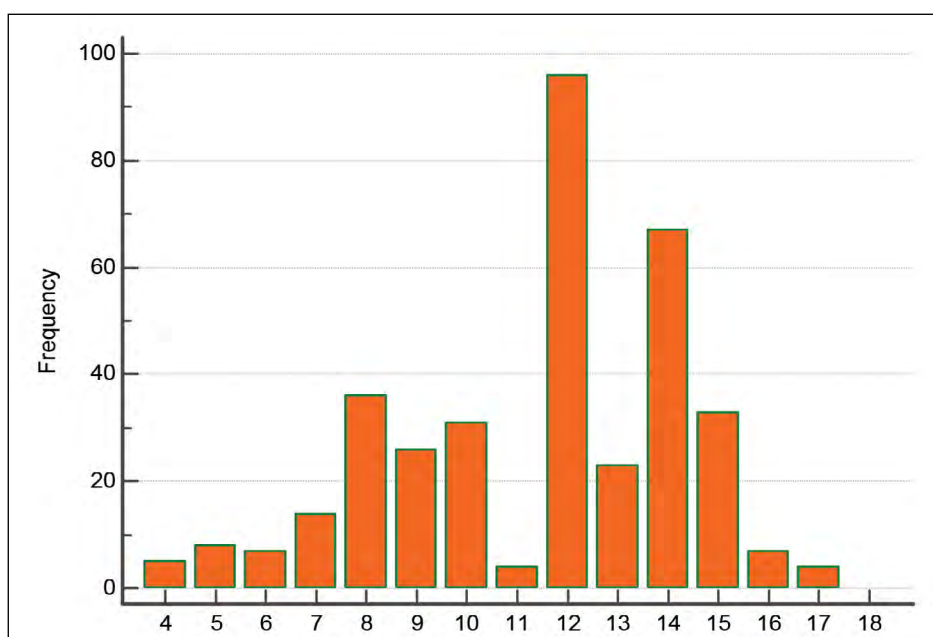
The study we conducted revealed that the age interval for taking up smoking ranged between 4 and 17 years old. In most cases, patients were teenagers (12-14 years old) (Figure 9).

**Question 10: *As for smoking during pregnancy and during post-partum, which of the following situations did you encounter most frequently?***

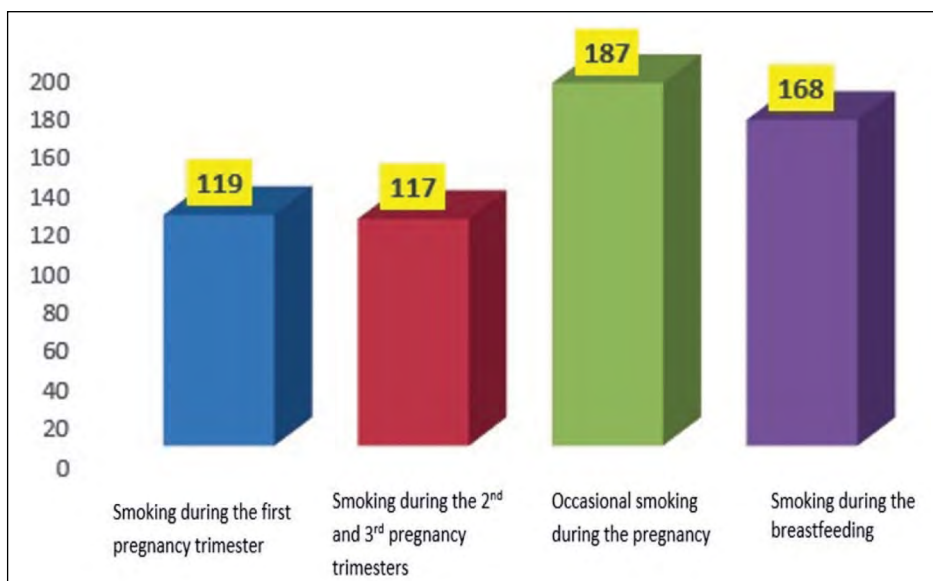
- Smoking during the first pregnancy trimester
- Smoking during the 2<sup>nd</sup> and 3<sup>rd</sup> pregnancy trimesters

- Occasional smoking during pregnancy
- Smoking during the breastfeeding period

The answers provided by respondents revealed that occasional smoking during pregnancy was the most frequently encountered, followed by the realization that numerous mothers smoke while they are breastfeeding. It is worth noting that 18.06% (67 respondents) did not provide any answer to this question. Only 13.2% (49 respondents) checked all 4 answer options, which means that smoking was found during all phases of pregnancy, as well as during the breastfeeding period. Consequently, smoking during preg-



**FIGURE 9.** Ages when patients smoke



**FIGURE 10.** Smoking during pregnancy and during the post-partum period

nancy and during the breastfeeding period was reported by approximately 82% of respondents (Figure 10).

## DISCUSSIONS

Smoking starts and develops as a habit during adolescence (1,2). Approximately 9 out of 10 smokers started smoking before they were 18 years old, and 98% before they were 26 years old (1). Every day in the United States of America more than 3,200 people under 18 years of age are smoking their first cigarette; of these, 2,100 become chronic smokers (1).

Smoking tobacco cigarettes registers the second level of prevalence of drugs consumption among the population of Romania. A total of 62.1% of persons in a representative sample report that they have smoked at least once during their lifetime (4). In the same study sample, 39.7% of individuals report that they are chronic smokers (daily smoking). Consequently, we can say that approximately 40% of the population in Romania were or are smokers (4).

The analysis of behavior incidence compared to the experimental consumption of tobacco between the two sexes shows that there are significant differences. Thus, the prevalence of consumption among the male population is of 70.9%, compared to 53.4% among the female population. The youngest age for tobacco consumption was 7 years old in our country. The average age for starting to smoke was 17.9 years old, adolescence being the time for taking up this vice. Moreover, an alarming percentage is registered for the onset of this behavior before the age of 14 years old (16.4%) (4).

The negative effects of smoking start to impact children as early as in utero. Maternal smoking is an important risk factor for the onset of pathologies such as in utero growth retardation, placenta praevia, placental abruption, premature birth, low birth weight, sudden death, difficulty of extrauterine adaptation, respiratory distress upon delivery. There are also studies that proved that there is an association between smoking and the occurrence of certain congenital malformations: cleft palate, organ malformations (via the direct mutagenic effects on the DNA caused by the components of cigarette smoke) (6,7).

After birth, the exposure of infants and children to cigarette smoke is an important risk factor for the onset of chronic lung pathologies (bronchial asthma, chronic respiratory disease such as chronic respiratory failure, allergic polysensitizations, malnourishment, various nutritional deficiencies, progressive long-term lung disease, behavioral disorders, sleep disorders etc.).

There are various types of smoking:

- active (“first hand smoke”) – direct use of products (classic cigarettes, electronic cigarettes, heated tobacco, other tobacco products);
- passive (“second-hand smoke”) – child exposure (fetus, newborn, infant, child) to cigarette smoke or directly to the by-products thereof;
- “third hand smoke” – child exposure to tobacco by-products (environmental pollution with harmful products after putting out a cigarette).

In Romania, the prevalence of smoking during childhood stretches towards 15%, the majority of smokers being teenagers. Flavored cigarettes are most appreciated at pediatric age (3). In 2014, 73% of high-school students and 56% of middle school students reported using a flavored tobacco product within the last 30 days. Current studies show that electronic, vape or heated tobacco cigarettes are just as harmful as classic cigarettes in terms of children’s health (5).

The idea for the survey started from the need to have an up-to-date picture of the matter of smoking during pediatric age, from the perspective of the people that are directly involved, namely parents, doctors, educators, and teachers. The distribution for the staff involved in filling out the surveys is relatively homogeneous (Figure 1 a, b), and the answers to the survey provide an overview for the problem of smoking during pediatric age at a national level.

The majority of respondents to the question on the professional level were pediatric trainees (74%). Consequently, it is necessary to get doctors of all professional levels involved, particularly young doctors, to promote health awareness on the one hand, and to explain the side effects of smoking on the harmonious growth and development of children on the other hand.

Active and passive smoking (“first hand smoking” and “second hand smoking”) are notions that health-care professionals are familiar with. The notion of “third hand smoking” was perceived as “new” by the surveyed medical staff, many of them (38.27%) considering it beneficial to know the side effects of “third hand smoking”, particularly on children.

Smoking usually debuts during childhood, either sooner or later, under the shaping influence of the family environment or that where the child develops and forms their personality. Sometimes, parental models can be decisive in the child’s decision to start smoking sooner or later. The majority of respondents (98%) said that the patient history component regarding parental smoking is found in their discussions with patients.

Determining the smoking or non-smoking status is a delicate moment in taking the patient history in chil-

dren, particularly teenagers. Healthcare professionals have to approach this topic very carefully in order to obtain a real answer from patients or their families. In the study we conducted, a total of 349 persons (94%) were persistent and obtained a real answer to the question regarding the patient's smoking status (Figure 6).

Health education must be provided at an age when the child understands and discriminates between the risks and benefits of a certain behavior, in this case those of smoking. Therefore, the correct approach to smoking, either by a doctor or a registered nurse, must be adopted within the medical act, with a particular focus on at-risk pediatric populations. The majority of survey respondents (60%) said they routinely approach the matter of smoking with at-risk patients (teenagers, young mothers, children from families with smokers). A "primary prophylaxis" is thus provided for the phenomenon of smoking during pediatric age.

In Romania, the minimum age reported for a smoker patient was 7 years old (4). In the answers that were obtained (361 answers), ages fluctuated between 4 years old and 17 years old, with a majority between 12 years old and 14 years old. In our study, the youngest child that had tried to smoke was 4 years old. According to existing nationwide statistics, adolescence is the at-risk age for taking up smoking – which was also confirmed by this study.

The harmful effects of smoking during pregnancy and during the post-partum period on infants and babies are well-known in the medical profession, yet less known by the general population. Precarious socio-economic status (illiteracy, insufficient education, poverty, and cultural influences) make worsen certain pathologies at this age. The high percentage (82%) of mothers that have smoked during pregnancy and dur-

ing the nursing period reveals alarming figures that certify the magnitude of this phenomenon in our country.

## CONCLUSIONS

Smoking among the pediatric population is a public health problem of a growing magnitude, both worldwide and nationwide. This study revealed alarming figures concerning the consumption of tobacco among children and teenagers.

Healthcare professionals play an essential role in the fight against this behavior. The growing temptation of smoking among the pediatric population must be constantly countered via permanent, accurate and complete information, resorting to medical scientific arguments. The tireless efforts for the active fight against smoking, for identifying and initiating modern prophylaxis methods for smoking-related lung pathologies must be a priority in national and international health policies.

It is essential for professional medical associations (Romanian Pediatric Society, Romanian Society of Pulmonology, Romanian Society of Obstetrics-Gynecology etc.) to be actively engaged as active partners of the Ministry of Health, Ministry of Education and the Ministry of Environment in order to intensify the fight against smoking and promoting a healthy lifestyle.

## Acknowledgement

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