

ORIGINAL PAPER

Intention to Quit Smoking of Firefighters in Greece

Kyriakoula Merakou, BA, MSc, PhD

Teaching and Research Associate, Dept. of Public and Administrative Health,
National School of Public Health, Athens, Greece

Stamatina Tsikrika, MD, MSc

Pneumonologist, Greece

Eleftherios Thireos, MD, MSc, GP

Health Center of Vari, Athens, Greece

Dimitrios Theodoridis, MD

Cardiologist, National Instant Aid Centre, Athens, Greece

Kallirhoe Kourea, MD, PhD

Cardiologist, Athens, Greece

Anastasia Barbouni, MD, MSc, PhD

Pediatrician, Teaching and Research Associate, Dept. of Public and
Administrative Health, National School of Public Health, Athens

Correspondence: Mrs Kyriakoula Merakou, National School of Public Health, 196, Alexandras Ave., Athens, 11521, Greece E-mail: kmerakou@esdy.edu.gr

Abstract

Background: Smoking increases the risk of getting cancer, respiratory and cardiovascular diseases as well as poorer treatment outcomes for certain disorders. Fire fighters are exposed to highly toxic substances and are therefore at higher risk of suffering from related diseases with those who smoke facing an even greater risk.

Objective: The objective of this study was to examine the intention of healthy fire fighters to quit smoking in Greece.

Methodology: Three hundred fire fighters who smoke participated in this study. A structured and anonymous questionnaire was used to collect data on their intention to quit smoking.

Results: Six out of ten fire fighters (n=186) (62%) were determined to quit. In their majority, they were high rank officers (n=94) (50.8%), male (n=53) (28.6%) and aged 25-45 years old (n=156) (52%). The advantages of quitting smoking (n=271)(90.4%), the money they spend on cigarettes (n=268)(89.5%), and their concerns regarding the dangers associated with smoking on their health (n=249)(83%), as well as the previous failed attempts to quit (n=209) (69.7%) and the feeling of guilt or shame associated with smoking in the presence of other family members or friends (n=192)(64%) are the main reasons behind their intention to quit. Only six out of ten (n=182) (60.6%) would like to visit a health professional to help them to quit while approximately three out of ten (n=108) (35.9%) would agree to use an evidence-based therapy to quit smoking.

Conclusions: The high rate of firemen who wish to quit indicates the need for the provision of cessation support services. The findings of our study reflect the need for additional research focusing on working populations who wish to quit and are exposed at similar health risks.

Key Words: Smoking, firefighters, intention to quit, motivation

Introduction

Smoking addiction has been considered as a chronic disease and the smoker as a patient who needs medical attention (Mackay & Eriksen, 2002). Smoking addiction is regarded as an uncontrollable dependence on cigarettes to the point where quitting would cause severe emotional, mental, or physical reactions by the smoker (White et al, 2006).

It is estimated that deaths from smoking will have increased by about 10 million per year until 2020. Additionally, 1.1 billion adults are currently smokers and smoking causes 3.5 million deaths each year on a global level. Half of these deaths are premature due to various types of smoking related diseases. Furthermore, individuals who started smoking during adolescence and continue for the next 20 years are expected to die 20–25 years earlier than those who have never smoked (Mackay & Eriksen, 2002).

Passive smoking has also been proved to cause similar diseases to active smoking. In the US alone 3.000 deaths are caused annually by lung cancer among non-smokers. When exposed to environmental tobacco smoke, either at home or at work, the risk of developing lung cancer increases by 20–30%. Similarly to active smoking, a dose–response relationship has been identified between second-hand smoke exposure and lung cancer—the longer the duration and the higher the level of exposure, the greater the risk of developing lung cancer. As a result, no safe level of exposure to second-hand smoke can be identified (Wipfli et al, 2008).

In Greece, the latest GATS survey conducted in 2013 by the National School of Public Health and the World Health Organization (WHO) indicated that 38% of the Greek population is smokers (Barbouni et al, 2014). The prevalence percentage indicated that the need for tobacco interventions is critically important in improving and protecting the health of the Greek population and vulnerable groups in particular such as women and children.

Only a very limited number of studies have been carried out to investigate tobacco use and intention to quit among fire fighters. The relevant published research has mainly

focused on topics such as coronary events that account for 39% of “on duty” deaths in fire fighters in the United States, where smoking is a main risk factor (Geibe et al, 2008). In another study from Switzerland fire fighters appeared to experience respiration issues, atopy and bronchial hyperactivity resulting from profession (Miedinger et al, 2007). Smoking, while working as a fire fighter, constitutes an additional risk factor and as such it should be prohibited. Alternatively, fire fighters who smoke should be encouraged to quit.

In the USA a four-year study that was conducted with firefighters showed that non-smokers had the highest value of the maximum expiratory capacity airways, which gradually reduced in both smokers and ex-smokers (Tashkin et al, 1997). In another study measuring carboxyhemoglobin (COHb) among firefighters before and after a fire extinguish incidence, it was found that after exposure at smoke, COHb levels were increased for all firefighters. However among smokers’ firefighters the increase in the value of COHb was statistically significant compared to non-smokers firefighters (Levy et al, 1976). Similar values were obtained when fire fighters underwent tests to assess the functions of their respiratory system (Douglas et al, 1985).

In a previous study in Greece on fire fighters, 75 (25%) were slightly addicted to smoking (score <3), 174 (58%) were moderately addicted (score 4-6), and 51 (17%) were highly addicted (score 7-10). With regards to gender, the majority of men (n=92) (35.67%) and few women (n=3) (7%) were considered to have a moderate addiction to tobacco use. The percentage of men who were highly addicted to smoking was 29.67% (n=77) while the age group 25-35 years showed the highest levels of addiction for both sexes (Merakou et al, 2013).

The lack of references on tobacco use among fire fighters motivated us to organize a study to examine their intention to quit.

Research Questions and Hypothesis

In the present study our main hypothesis was whether the intention to quit smoking was high among fire fighters.

The research questions investigated regarded:

- The intention to quit smoking
- The factors contributing to quit smoking
- The correlation of demographic data with the intention to quit
- The need for organizing smoking cessation programs in their workplace

Methodology

This analysis is the second part of a two part study that investigates the fire fighters smokers' motivation for smoking cessation among men and women in order to assess the need of implementing smoking cessation programs in the workplace. The first part of the research focused on the fire fighters' level of addiction, controlled for demographic information.

Design, sample and sampling

A cross-sectional study took place in the Headquarters of the Brigade (which gave us the permission to conduct this study). The following services were selected using the simple and random method: the Health Administration Department, the Fire Brigade Academy and 6 local Firefighting Stations in Attica.

For the fire fighters sample selection, the stratified sampling technique was used, according to which the total working population of firemen were subdivided in homogenous groups according to their position in hierarchy. Thus, four groups were formed: high ranking officers, low ranking officers, field firefighters and firefighters working in administrative posts. A random sample was then selected from each group.

Out of 320 smokers who worked in the selected services, 300 agreed to participate to this study signing a written form of consent. The study was carried out during a two month period (21/2 – 21/4/ 2008).

Instrument for data collection

The instrument used for the data collection process was a structured questionnaire based on international literature. The questionnaire

included sixteen questions that assessed the participants' intention to quit smoking. Questions about demographic characteristics such as sex, age, permanent residence, rank in the Fire Department and level of education, were added. The questionnaire was anonymous and self-administered.

Smokers, in a defined day and time, and after being fully informed of the purpose of the study by the researcher, filled in the questionnaires and placed them in a special box, in the presence of the researcher, for the protection of their anonymity.

Statistical analysis of the data was carried out using SPSS 12.0. Control of cross-correlations was done using the χ^2 method.

Results

Sociodemographic data

The sample consisted of 258 men (86%) and 42 women (14%), with a mean age of 34.3 ± 6.8 years old. The majority was within the age group 25-35 years old. Among the participants, 132 individuals (44%) were high ranking officers, 16% (n=48) were low ranking officers, 26% (n=78) were firefighters, 8.67% (n=26) were administrative officers while the remaining 5.33% (n=16) included staff with various other positions. Two hundred and nine participants (69.65%) lived in Athens, 17 (12.33%) in other cities and 54 (18%) reported a provincial village as their permanent residence. 182 participants (60.7%) had only completed high school, 109 (36.3%) had a university degree, and 9 (3%) had a postgraduate degree.

Intention to quit smoking

62% (n=186) of participants were determined to quit smoking. 84% (n=156) of these individuals were men 16% (n=30) women. The vast majority of participants belonged to the age group 25-45 years old (50.8%) (n=94) and were mainly officers (28.6%) (n=53) and firefighters (15.6%) (n=29). 38% (n=114) of the sample participants did not consider quitting at all. 102 (90%) of these individuals were men and the remaining women (item 1, table 1). A statistically significant difference was observed among the permanent residents of Athens and those permanently residing in

rural areas, with the former considerably more determined to quit than the latter ($p=0.018$).82.7% ($n=248$) of smokers were concerned about the serious health risks associated with smoking and 17.3% ($n=52$) were not worried at all ($p<0.05$) (item 2, table 1).

Table 1: Selected items regarding fire fighters’ responses about the intention to quit Smoking

	Items	N (%)	N (%)	p
1	How determined are you to quit?	Very much/Enough 186 (62)	Not at all 114 (38)	$p>0.05$
2	Are you concerned about the serious health risks associated with smoking?	Very much/Enough 248 (82.7)	Never 52 (17.3)	$P<0.05$
3	Do you consider the advantages associated with quitting?	Very often/Enough 271 (90.3)	Never 29 (9.7)	$P<0.05$
4	Would you consult your doctor, your pharmacist or a special cessation program?	Yes 182 (60.7)	No 118 (39.3)	$p>0.05$
5	Have you ever tried to quit in the past?	A few times 209 (69.7)	Never 91 (30.3)	$P<0.05$
6	Do you trust yourself that you will succeed in quitting next time you try?	Very much 151 (50.3)	I am not sure 149 (49.7)	$p>0.05$
7	Are you willing to avoid stimuli that motivate you to smoke?	Yes 208 (69.4)	No 92 (30.6)	$p>0.05$
8	Would you use an evidence-based medical therapy, such as nicotine substitutes or other medications to quit?	Yes 108 (35.9)	No 155 (51.7)	$p>0.05$
9	Do you feel guilty or shame when you smoke in the presence of family members or friends?	Constantly 189 (64.1)	Never 108 (35.9)	$p>0.05$
10	Do you spend a lot of money on cigarettes?	Agree 269 (89.7)	Disagree 31 (10.3)	$P<0.05$

The great majority of the study participants (90.3%) (n=271) considered the advantages of quitting and the relevant benefits and 9.7% (n=29) were not concerned about these at all ($p < 0.05$) (item 3, table 1).

Six out of ten smokers (60.7%) (n=182) would like to visit a health professional to help them quit and 39.3% (n=118) have never considered it ($p > 0.05$) (item 4, table 1).

Seven out of ten smokers (69.7%) (n=209) has tried a few times in the past to quit while three out of ten smokers (30.3%) (n=91) has never tried ($p < 0.05$). Statistically significant differences were observed regarding the number of efforts to quit in the past and the individuals' decision to quit ($p = 0.048$) (item 5, table 1).

Half of the participants (50.3%) (n=151) are very confident that they will successfully quit in their next attempt and the other half (n=149) (49.7%) are not certain at all ($p > 0.05$) (item 6, table 1).

A great percentage of the study participants (n=208) (69.4%) were willing to avoid all stimuli associated with tobacco use, while 92 (30.6%) did not consider avoiding them ($P > 0.05$) (item 7, table 1).

Also, 35.9% (n=108) were positive towards the idea to use an evidence-based therapy to quit while 51.7% (n=155) were not ($p > 0.05$) (item 8, table 1). A statistically significant difference was observed regarding the level of addiction ($p = 0.001$).

64.1% (n=189) felt guilty smoking at the presence of friends or family members either constantly while 35.9% (n=108) did not ($p > 0.05$) (item 9, table 1).

Finally, nine out of ten participants (89.7%) (n=267) agreed that they spent a considerable amount of money on cigarettes ($p < 0.05$) (item 10, table 1).

Discussion

Main Findings

Most firemen are either determined or wish to quit smoking due to the following factors in order of priority: the future benefits following quitting, the large amounts of money spent on cigarettes, their concerns regarding the health

risks associated with smoking, the past failed attempts to quit and the feelings of guilt while smoking in the presence of friends or family members. Most firemen would visit a health professional to request assistance with quitting while a few of them would also like to use an evidence-based pharmaceutical therapy for this purpose.

Results in relation to the literature

Due to the absence of studies regarding firemen' intention to quit smoking we discuss the results in relation to and comparison with smokers in the general population.

In our study, six out of ten smokers are determined or wish to quit smoking. In their majority, these individuals are men and occupy senior posts in their professional hierarchy. According to a past study, in Thriassio Hospital on Greece, regarding smokers' intention to quit, those individual that were most determined were doctors, and nurses followed by the administrative and other members of staff (Traganas et al, 2004). These findings are in line with previous studies that concluding among others that the intention to quit is an independent predictor of smoking cessation (Takahashi et al, 2006). Also, in other studies, it has been shown that the more highly educated the smoker the stronger his/her desire to quit smoking (Perez et al, 2003, Duncan et al, 1992).

In this study, statistically significant correlation was observed with age and sex. Male smokers and people within the 25-45 years old constituted in their majority those either determined or willing to quit. Sex has been proved by other studies as well, as an independent factor for quitting (Ma et al 2013, Djikanovic et al 2013, Ladwig et al 2005). Additionally, individuals belonging to this age group (25-45) have been reported in the literature as those most highly motivated because they want to be good role models for their children (Ramon Torrell et al 2009, Nerin et al 2003).

Approximately one third of firemen who smoke do not consider quitting at all. This finding may be due to the highly stressful nature of the specific job as opposed to

several other professions of the general population. In a recent study a population sample in Serbia indicated that 1 out of 5 smokers (22%) did not intend to quit smoking (Djikanovic et al, 2013). These individuals have been characterized as victims of a conceited healthy smoker effect triggered by the absence of ill body or affective symptoms (Lagwig et al, 2005).

Eight out of ten smokers are aware of and concerned about the serious health risks associated with tobacco use. This finding concedes with findings from other researchers pointing out that the main reasons smokers wish to quit are: a) the fear of developing potentially serious conditions and (Nerin et al, 2003, Bernstein et al 2008).

Nine out of ten smokers consider the benefits of quitting and this has been confirmed in several other studies (Grantziou, 2002). The most frequent known advantages of quitting for smokers include pharmacological and behavioral withdrawal symptoms, the savings made in their monthly budget, and the benefits gained with regards to their overall physical status and health in general (Hendricks et al, 2009).

Six out of ten smokers would visit a health professional to help them quit. According to the data reported in a past study, the majority of smokers are willing to receive smoking cessation counseling (Bock et al, 2001). It is widely reported in the international literature that if the health professional treats the smoker as a patients and spends three minutes of his time to increase his personal motivation to quit the results are considerably encouraging with the smoker starting to consider the idea of quitting much quicker (Fangestrom, 2005).

Seven out of ten smokers, in the present study, have tried to quit in the past but failed to succeed and this finding has also been reported in a Spanish study (Nerin et al, 2003). In previous studies in Greece the average number of failed attempts to quit in the past before successfully quitting was 4.6 times for men and 5.5 for women (Argyropoulou & Pataka, 2005). It is only a minority of smokers who succeeds to quit in their first attempt; the majority of continues to smoke for many years while going through phases of remission and relapse. The

previous cessation experiences by the smoker are very important for the quit attempts to follow (Grantziou, 2002). In a recent study four out of ten smokers (40%) tried to quit but only 23% managed to remain abstinent for at least one month (Cooper et al, 2011). Additionally, it has been reported that the number of previous attempts to quit are a predictive factor for the level of strength of the smokers' motivation to quit (Bouaiti et al, 2010). In our study a statistically significant correlation with the degree of dependence on nicotine was observed and this finding has also proved by other researchers to be an independent factor in successfully quitting smoking (Ma et al, 2013, Chaiton et al, 2007).

Half of the firemen who participated in our study were confident that they would successfully quit in their next attempt. This is a positive finding as past studies have correlated successful cessation with self-efficacy and self-confidence (Zvolensky et al, 2006, Ditre et al, 2008).

Additionally, in our study, it was recorded that seven out of ten firemen were willing to avoid all stimuli that may lead them to smoke. This is another positive finding since avoidance of stimuli that may trigger the desire for tobacco use is reported as a successful method to quit (Richter et al, 2002).

Only one third of firemen who smoke would use an evidence-based medical treatment or medication to quit smoking. Another Greek research study indicates that the better informed the smoker the more positive towards the idea of adopting a tested treatment or pharmacotherapy as part of a cessation method. In Greek Thriassio Hospital one out of four doctors, one out of five nurses, less than one out of five administrative officers and one out of ten of the remaining hospital staff would use a medical treatment or medicines to quit (Traganas et al, 2004). The data show that only those smokers that are truly determined to quit are willing to visit a cessation professional (Kourea-Kremastinou, 2005). In our study there was significant correlation with the degree of dependence and this finding is also confirmed by other studies in the bibliography. Use of help to quit

(pharmacotherapy, behavioral support) has risen the last decade especially among more dependent smokers. Given the continuing high levels of unassisted and failed attempts to quit smokers may realize that professional help is more effective (Cooper et al, 2011).

More than six out of ten smokers feel guilty and shameful when smoking in the presence of their family members or friends and this indicates, among others, that attitudes and perceptions towards tobacco use have started to change in our country. Feelings of shame and guilt by smokers when using tobacco in the presence of others have also been highlighted by other researchers in the international literature (Irwin et al, 2005, LoConte et al, 2008, Bialous et al, 2004). On the other hand it appears impressive that four out of ten firemen who smoke do not feel uncomfortable at all for smoking in the presence of the others and this finding is also confirmed by other studies (Grantziou, 2002).

Nine out of ten firemen believe that they spend a lot of money on tobacco. It has been shown that increasing tobacco prices has an effect on smokers' intentions to quit or smoke less, according to a study in western countries (Ross et al, 2011).

From this research experience we found that smokers in some professions have a higher risk of ill health due to the nature of their work. Thus, these working groups should be offered priority in preventative interventions. The workplace seems to be an ideal setting for smoking cessation programs and this has been supported by other researchers as well (Cunradi et al 2007, Albertsen et al 2006, Cahill et al 2008, Armitage 2007, O'Connell et al 2006, Tanaka et al 2006).

Also, it is important to conduct further studies regarding professions with high risk factors and increased physical and emotional stress, such as fire fighters. As proven by other studies, certain professions and blue collar employees in particular, are more likely to be addicted to tobacco use (Cunradi et al 2007, Albertsen et al 2006, Rothenbacher et al 1996, Argyropoulou & Patakas 2005). For firemen there is not just the need to study the connection between the toxic inhalation of smoke and tobacco use but it is also important to investigate the

smoking behavior of these individuals. In this way, health professionals can gain a better idea of the population's characteristics and as a result design more enhanced and detailed smoking cessation programs. The implementation of such programs would improve the populations' living standards and stimulate these individuals to adopt a healthier behavioral norm, free from the harmful impacts of nicotine.

Strengths and limitations

With regards to strengths this is the first study on intention to quit smoking of firefighters in Greece. Another positive point, is that the majority of smokers asked the researcher about smoking cessation programs and their implementation in the workplace. This indicates that health promotion programs in the workplace are not only welcome but can also contribute to adopting a healthier lifestyle.

A number of limitations were also observed. Although efforts were made to select a sample that would be representative of the whole country, this was not possible and therefore, sampling was thus confined to the city of Athens, the capital of Greece. However, the sample included firefighters working in various regions in the country that happened to be in Athens for educational purposes at the time of the study. Finally, the use of a self-administered questionnaire may have allowed subjective interpretations and beliefs on behalf of the firefighters although thorough information had been provided to them beforehand.

Conclusions

A very high percentage of firefighters are determined or willing to quit smoking due to the following reasons in order of priority: the resulting benefits, the savings made, their concerns regarding the relevant health risks, the number of past failed attempts and the feelings of shame and guilt when smoking in the presence of family members or friends. Most firemen would consider visiting a health professional to request support in their efforts to quit while only few would like to use an evidence-based pharmaceutical therapy. In depth information of medical treatments may increase the percentage of those denying undergoing such treatments.

Additionally, the implementation of smoking cessation programs in the workplace will ensure that they will be easily accessible by those interested to participate who would not be able to attend otherwise due to their round-the-clock working hours.

References

- Argyropoulou A. and Patakas D. (2005) Factors that modify smoking behavior of men and women. *Pneumon* 18(3): 88-89 (in Greek).
- Barbouni A. Rachiotis G. Antoniadou E. Merakou K. Kostikas K. Kourea K. Kourea-Kremastinou J. Chantzichristodoulou Ch. (2014). Hellenic study of Adults for smoking in Greece. 10th Hellenic Congress of Public Health and Health Services: Public Health-A road for Development, Athens 31 March-2 April 2014.
- Bernstein SL. Boudreaux ED. Cabral L. Cydulka RK. Schwegman D. Larkin GL. Adams AL. McCullough LB. Rhodes KV. (2008). Nicotine dependence, motivation to quit, and diagnosis among adult emergency department patients who smoke: a national survey. *Nicotine Tob Res.* 10(8): 1277-82.
- Bialous SA. Sarna L. Wewers ME. Froelicher ES. Danao L. (2004). Nurses' perspectives of smoking initiation, addiction, and cessation. *Nurs Res* 53(6): 387-95.
- Bock BC. Becker B. Monteiro R. Partidge R. Fisher S. Spencer J. (2001). Physician intervention and patient risk perception among smokers with acute respiratory illness in the emergency department. *Prev Med* 32(2): 175-81.
- Bouaiti E. Mzouri M. Sbai-Idrissi K. Razine R. Kassouati J. Lamrabet M. Hassouni F. Qualine M. Benbrahim NF. (2010). Factors predictive of good motivation to quit smoking among Moroccan smokers attending a lung disease outpatient clinic in 2008. *Rev Epidemiol Sante Publique* 58(1): 68-73.
- Chaiton MO. Cohen JE. McDonald PW. Bondy SJ. (2007). The Heaviness of Smoking Index as a predictor of smoking cessation in Canada. *Addict Behav* 32(5): 1031-42.
- Cooper J. Borland R. Yong HH. (2011). Australian smokers increasingly use help to quit, but number of attempts remains stable: findings from the International Tobacco Control Study 2002-09. *Aust N Z J Public Health* 35(4): 368-76.
- Ditre JW. Coraggio JT. Herzog TA. (2008). Associations between parental smoking restrictions and adolescent smoking. 10(6): 975-83.
- Djikanovic B. Vukovic D. Djikanovic S. (2013). Inequalities in intentions to quit smoking in Serbia: data from 2006 National Health Survey. *Public Health* 127(6).
- Douglas B.D. Douglas R.B. (1985) Pulmonary function of London firemen. *Br Int Med*, 42:155-8.
- Duncan CL. Cummings SR. Hudes ES. Zahnd E. Coates TJ. (1992). Quitting smoking: reasons for quitting and predictors of cessation among medical patients. *J Gen Intern Med* 7(4): 398-404.
- Frangestrome K. (2005) Nicotine replacement in smoking cessation. *Breathe* 2: 66-68.
- Gratsiou Ch. (2002) Addiction from smoking. Medical School, Athens University, Athens, Greece.
- Hendricks PS. Wood SB. Hall SM. (2009). Smokers' expectancies for abstinence: preliminary results from focus groups. *Psychol Addict Behav* 23(2): 380-5.
- Irwin LG. Johnson JL. Bottorff JL. (2005). Mothers who smoke: Confessions and justifications. *Health Care Women Int.* 26(7): 577-90.
- Kourea-Kremastinou J. (2005) Basic Principles of Public Health. National School of Public Health, Athens.
- Ladwig KH. Bumert J. Lowel H. Doring A. Wichmann HE. KORA Investigators. (2005). Contemplating to quit current smoking status: differences in behavioral and psychosocial patterns in population-based cohort of current smokers. *Prev Med* 41(1): 134-40.
- Levy AI. et al, (1976). *Annals of Clinical and Science. Laboratory*, 6, (5), 455-458.
- LoConte NK. Else-Quest NM. Eickhoff J. Hyde J. Schiller JH. (2008). Assessment of guilt and shame in patients with non-small-cell lung cancer compared with patients with breast and prostate cancer. 9(3): 171-8.
- Ma E. Chan T. Zhang O. Yang JS. Wang YY. Li YC. Ho R. Lai C. Lam PY. (2013). Effectiveness of Acupuncture for Smoking Cessation in a Chinese Population. *Asia Pac J Public Health* 2013 Oct 4 [Epub ahead of print].
- Nerin I. Crucelaegui A. Mas A. Guillen D. (2003). Profile of smokers who seek treatment at a smoking cessation clinic. *Arch Bronconeumol.* 39(7): 298-302 (in Spanish).
- Patakas D. (1994) *Pneumonology*. Publications University Studio Press, Thessaloniki, Greece (in Greek).
- Perez PV. Rodriguez M. Alfonso K. Bonet M. Garcia RG. Larrea NF. Perez RM. (2003). Factors associated with stages of behavior change in Cuban smokers. *Rev Panam Salud Publica* 14(2): 119-24 (in Spanish).
- Ramon Torrel JM. Bruguera Cortada E. Fernandez Pinilla C. Sanz de Burgoa V. Ramirez Vazquez E. (2009). Reasons for

- smoking cessation in Spain by gender and age. *Gac Sanit.* 23(6): 539.e1-6.
- Richter KP. McCool RM. Okuyemi KS. Mayo MS. Ahluwalia JS. (2002). Patients' views on smoking cessation and tobacco harm reduction during drug treatment. *Nicotine Tob Res* 4 Suppl 2:S175-82.
- Ross H. Blecher E. Yan L. Cummings KM. (2011). Predictors of what smokers say they will do in response to future price increases. Findings from the International Tobacco Control (ITC) Four Country Survey. *Nicotine Tob Res* 13(6): 419-25.
- Takahashi K. Saso H. Saka H. Saso H. Iwata M. Hashimoto I. Naito M. Hamajima N. (2006). A pilot study on inducement of smoking cessation by a simple 5A (asking, advice, assess, assist, and arrange) approach at outpatient clinics. *Asian Pac J Cancer Prev* 7(1): 131-5.
- Tashkin D.P. Genovesi M.G. et al (1997) Respiratory status of Los Angeles firemen. One-month follow up after inhalation of dense smoke. *Chest*, 71:445.
- Traganas S. Peppas P. and Nanou F. (2004) Smoking habits in the staff of the Thrasio Hospital. *Pneumon* 17(3):20-21 (in greek).
- Zvolensky MJ. Bonn-Miller MO. Feldner MT. Leen-Feldner E. McLeish AC. Gregor K. (2006). Anxiety sensitive: Concurrent associations with negative affect smoking motives and abstinence self-confidence among young adult smokers. *Addict Behav* 31(3): 429-39.