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5-Year trends in the intention to quit smoking amidst the economic crisis and after recently implemented tobacco control measures in Greece

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HIGHLIGHTS

- National smoking prevalence has decreased by 5% since 2006.
- The intention to quit smoking has increased by 9% since 2006.
- The intention to quit has increased by 17% among high SES and by 14% among low SES.
- Socio-economic and demographic variables did not impact the intention to quit.
- However, in 2011 quit attempts were more likely among smokers of higher SES.

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ABSTRACT

Objectives: The objective of the present study was to explore the trends in the intention to quit smoking among adults in Greece between 2006 and 2011, a period characterized by financial instability and newly endorsed tobacco control initiatives.
Methods: Trend analysis of 3 representative national and cross-sectional surveys, 'Hellas Health I' (2006), "Hellas Health III" (2010) and Hellas Health IV (2011).
Results: Since 2006, the intention to quit smoking has significantly increased among both genders (33.3% [in 2006] to 42.4% [in 2011], $p = 0.002$), among respondents aged >54 years (26.9% [in 2006] to 45.1% [in 2011], $p = 0.019$) and among residents of rural areas (26.4% [in 2006] to 46.7% [in 2011], $p = 0.001$). Both highest (32.1% [in 2006] to 49.4% [in 2011], $p = 0.036$) and lowest (31.7% to 46.0%, $p = 0.021$) socioeconomic (SE) strata showed an increase in the proportion of smokers who intend to quit. However, in 2011, quit attempts were more frequent (35.3%, $p = 0.009$) in smokers of high socioeconomic status. Moreover, smoking prevalence has significantly decreased (43.1% [in 2006] to 38.1% [in 2011], $p = 0.023$), mainly among men (52.4% to 45.7%, $p = 0.037$), respondents of low socioeconomic status (38.9% to 29.4%, $p = 0.008$) and residents of urban areas (45.2% to 37.9%, $p = 0.005$).
Conclusions: Over the past 5 years and possibly as a combined result of the implemented tobacco control policies and austerity measures, the intention to quit smoking has increased among all SE strata, however actual quit attempts were higher among those less disadvantaged. Further effort should be made to support quit attempts, especially among vulnerable populations.

1. Introduction

Smoking is one of the largest public health problems and a cause of major concern worldwide (Vardavas & Kafatos, 2007). Greece has the highest adult percentage of current tobacco use among OECD countries (OECD, 2011). Several surveys performed during the past decade in Greece (Filippidis, Tzavara, Dimitrakaki, & Tountas, 2011; Pitsavos,

Abbreviations: HH1, Hellas Health I; HH2, Hellas Health II; HH3, Hellas Health III; HH4, Hellas Health IV; SE, socioeconomic.

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Panagiotakos, Chrysohoou, & Stefanadis, 2003; Sotiropoulos et al., 2007), showed high prevalence in all age, educational and occupational groups. Although smoking prevalence in Greece (general population data) had previously been documented as progressively increasing (European Commission, 2010; Filippidis et al., 2011; Pitsavos et al., 2003), a recent nationwide cross sectional survey (Filippidis et al., 2012) documented a downward trend in prevalence and consumption among adults in Greece during the past 5 years (Alpert et al., 2013). Among the EU member states, Greece has notably one of the lowest proportions of ex-smokers (14% in 2009) and of citizens never smoked (44% in 2009), in comparison to the average EU percentage of 22% and 49% respectively. In Greece, the proportion of ex-smokers has decreased by 3% since 2006 and the proportion of citizens never smoked has increased by 3% since 2006 (European Commission, 2010).

European and Greek research data provide well established proof of socioeconomic differences in smoking prevalence (Cavelaars et al., 2000; European Commission, 2010; Filippidis et al., 2012; Nagelhout et al., 2012; Woods, Rachet, & Coleman, 2006). However, the socioeconomic differences in the intention to quit smoking are not so widely studied (Myung et al., 2012; Sorensen et al., 2013), especially in Greece and in light of the recently implemented tobacco control policies (Alpert et al., 2013; Vardavas & Behrakis, 2009, 2012). More specifically, over the past few years, a number of tobacco control policies were implemented in Greece that could have been effective in reducing overall tobacco prevalence. Greece has adopted a tobacco control plan that gradually prohibited smoking in all public places, restricted tobacco advertising and imposed increased prices through tobacco excise taxes. In July 2009, a partial ban of smoking in public places and within enclosed worksites (with the exception of separate smoking rooms) was implemented. Hospitality venues with a floor space less than 70 m^2 were given the option to choose between being licensed as smoking or non-smoking venue. This partial ban was introduced along with the ban on outdoor tobacco advertising with the exception of advertising at point of purchase. A year later, in September 2010, a more comprehensive smoke-free legislation was enacted in all enclosed worksites, while in July 2011 smoking was prohibited in all hospitality venues with the exception of casinos and live music bars with a floor space above 300 m^2, where separate smoking rooms were still allowed (Vardavas et al., 2012; Vardavas & Behrakis, 2012; Vardavas et al., 2011). Moreover, in Greece between years 2006 and 2011, GDP per capita dropped by 17% while tobacco product prices increased by 37% (Hellenic Statistical Authority, 2013). Tobacco control policies, such as the ones implemented, albeit not comprehensively in Greece, have been associated with a decrease in smoking prevalence and tobacco consumption and an increase in the proportion of smokers who quit (Fichtenberg & Glantz, 2002; Filippidis et al., 2012; Fowkes, Stewart, Fowkes, Amos, & Price, 2008; Martinez-Sanchez et al., 2010; Nagelhout, Willemsen, & de Vries, 2011).

Furthermore, over the past years, Greece has been affected by a serious financial crisis, which has rippled across the Eurozone and potentially had an impact on the Greek population's purchasing power (Karanikolos et al., 2013). Although in 2008, the Greek economy was regarded as the 27th largest economy of the world (Eurostat, 2010), after consecutive years of financial growth, a Memorandum of Economic and Financial Policies was signed in 2010 in order to avert Greece' s default (Bank of Greece, 2011; Karanikolos et al., 2013). A year later and while the Greek economy continued to recede, GDP further declined by −6.9% compared to a growth of 5.5% in 2006. Moreover, the decline in production was the main cause of the surge in unemployment by approximately 248,000 people in 2011 (Bank of Greece, 2012). More specifically, the national unemployment rate increased from 7.4% in the second quarter of 2008 to 16.7% in the second quarter of 2011 (Bakas & Papapetrou, 2012). The current financial situation in Greece has led to the weakening of the Greek population's purchasing power (Zavras, Tsiantou, Pavi, Mylona, & Kyriopoulos, 2013) and to elevated suicide and homicide mortality rates while outbreaks of infectious diseases are becoming more common. Health care needs are rising while access to health care is limited mainly due to budget cuts (Karanikolos et al., 2013; Kondilis et al., 2013). On this basis, the objective of the present study was to explore trends in the intention to quit smoking in Greece between years 2006 and 2011, by demographic and socioeconomic variables, under the hypothesis that legislation for tobacco control and changing financial circumstances could have influenced the intention to quit smoking among the Greek population.

2. Methods

For this purpose data from the national household surveys "Hellas Health I" (HH1) in October 2006 (Filippidis et al., 2011), "Hellas Health III" (HH3) in October 2010 (Filippidis et al., 2012), and "Hellas Health IV" (HH4) in October 2011, were merged and analyzed. The "Hellas Health II" (HH2) survey in June 2008 did not include any questions examining intention to quit or quit attempts among the adult Greek population and thus HH2 data were not used as data sources.

2.1. Sampling methodology

The designed survey samples consisted of individuals, aged >18 years old (HH1 N = 1005, HH3 N = 1000, HH4 N = 1008). The surveys covered urban and rural areas of the country and each of the 13 geographical regions. Participants were fluent speakers of the Greek language and residents of the above coverage area. Respondents were selected by means of a three stage, proportional to size sampling design. At the first stage, a random sample of building blocks was selected proportionally to size based on the 2001 Population Census of the National Statistical Service of Greece. At the second stage, in each selected area of blocks, the households to be interviewed were randomly selected by means of systematic sampling. Any person or group of persons living in a separate housing unit was considered as a 'household' unit. At the third stage, in each household, a sample of individuals aged >18 years old was selected by means of simple random sampling. Effective response rate reached 72.4% in 2006, 48.6% in 2010 and 45.8% in 2011. The samples were representative of Greek population in terms of age and residency. Interviews were conducted according to the ESOMAR code of practice by trained interviewers. Ethical approval was given by the Ethics Committee of the Medical School of the National and Kapodistrian University of Athens.

2.2. Definitions

All individuals were asked to report their gender, age, marital status, level of education and place of residence (urban areas = 2000 or more inhabitants and rural areas = less than 2000 inhabitants). Respondents were classified in three groups according to their educational level (up to elementary school = low, secondary [up to high school] = middle, university, college or technical school = high), age (18–34, 35–54 and more than 54 years of age), marital status (single, married and widowed/divorced) and socioeconomic status (high = A/B–C1, middle = C2, low = D/E of the ESOMAR scale) (Filippidis et al., 2012). The ESOMAR scale applied, assigns a socioeconomic level to an individual, on the basis of the family's main income earner's job category and their level of education. Participants were also asked if they smoke through the question "Do you smoke daily, less than daily or not at all?" with the following responses: (1) Yes, daily; (2) Yes, but not daily; (3) not at all; (4) none response. People who responded 1 or 2 were merged together and were characterized as smokers. People, who responded that they had smoked at least 100 cigarettes in their life, but were not smokers, were classified as ex-smokers. A quit attempt in the past year was assessed only for 2011 survey through the question "During the past twelve months, have you stopped smoking even for a day?" The intention to quit smoking was defined with the question "Do you intent to quit smoking in the future?" with the following