Results from an e-learning course designed to train medical students on how to treat nicotine dependence in clinical practice

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Tobacco smoking is the leading cause of preventable death in developed countries and every smoker should be encouraged to give up smoking. Physicians are instrumental in advising smokers to quit and educating patients about the harms of smoking; however, they often do not engage in these behaviours (Ferketich et al., 2008). One cited reason for not counselling smokers to quit relates to inadequate medical school training in nicotine dependence and methods for cessation. Recent studies on medical education in European countries have consistently shown inadequate undergraduate training in this area. In our own research, we found that Italian medical students have limited knowledge about tobacco dependence, smoking related pathologies, smoking cessation and the role of physician in promoting cessation (Grassi et al., 2014 & 2012). This is surprising when considering that well-conceived educational interventions to improve knowledge, skills, and attitudes of medical students regarding the treatment of smokers are available (Fiore et al., 2008). Arguably, one factor limiting the implementation of such programs is their cost in terms of resources and teacher time. There is a need for straightforward and relatively simple but yet effective tobacco curricula. Our aim for this study was to improve the Italian medical core curriculum by including more information on tobacco dependence, treatment and prevention, through an e-learning course. The online course, developed in English, for advanced medical students, consists of a total of 11 Didactic Modules including topics such as the epidemiology of tobacco use in Italy,ND and his treatment, the role of the doctor to help smokers quit. The first part of the course is composed of 6 Modules: Tobacco Dependence I (TDI) and the second of 5 Modules "TDII". A pre- and post-questionnaire for each block of Modules aimed at assessing knowledge about: epidemiology of tobacco use, health effects associated with smoking and benefits of smoking cessation, how to diagnose ND and the therapies to treat ND; how doctors can deliver the 5 "A" to help patients quitting smoking. We developed this course following validation of a questionnaire (Grassi et al., 2012) addressing knowledge of smoking epidemiology, health effects and benefits of giving up smoking ("Score 1", TDI), and effectiveness of cessation treatments ("Score 2", TDII). The course was available for Sapienza medical students from December 2016 to February 2017. Learning materials were available in English with audio commentary. Questionnaire were elaborated using IBM SPSS Statistics. The course was taken by 300 students (25.7±2.8 yrs; females 57%). Questionnaire for TDI and TDII were completed from 279 and 281 students, respectively. Prevalence of smoking was 18.8% (n=48), with no significant gender difference with regards to tobacco use. The mean Fagerström score was 1.8±2.2. At the end of each course, a significant improvement was observed with regards to both Score 1 (TDI: pre-course 45.9±13.2, post-course 60.1±13.4, P<.0001) and Score 2 (TDII: pre-course 56.5±11.3, post-course 68.0±10.8, P<.0001). Most students would like their medical school to be completely smoke-free, with an increase after the end of both courses (before TDI: 69.4%, after TDII: 86.2%, P<.0001). The majority of smokers (76.6%) were considering quitting, with only 23.4% of current

smokers reporting no intention in these regards. Only 32.7% reported to have received an advice to quit smoking from their GP in the last year. This e-learning course has proven to be an effective tool in teaching. Compared to our previous research, the e-learning Modules have shown far better results in regards to both Score 1 and 2.

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