


Proceeding Paper

Awareness and Use of Heat-Not-Burn Tobacco among Students of Egas Moniz—Cooperative of Higher Education [†]

Ana Sofia Pintado ^{1,*} , Duarte Sousa-Tavares ² and Patrícia Cavaco-Silva ²

¹ Pharmaceutical Sciences, Egas Moniz University Institute (IUEM), 2829-511 Monte de Caparica, Portugal

² Egas Moniz Interdisciplinary Center (CiiEM), 2829-511 Monte de Caparica, Portugal; dptavares@egasmoniz.edu.pt (D.S.-T.); montezpat@gmail.com (P.C.-S.)

* Correspondence: sofia.pintado2@gmail.com

[†] Presented at the 5th International Congress of CiiEM—Reducing inequalities in Health and Society, Online, 16–18 June 2021.

Abstract: Heated tobacco products (HTP) use a device that heats tobacco to generate an aerosol containing nicotine instead of burning it as it happens with combustion tobacco. This study aimed to determine the prevalence of heat-not-burn tobacco use among students of a Healthcare University Institution—Egas Moniz—and identify the factors that influence this use. A questionnaire adapted from the WHO Global Health Professional Students Survey was applied between May and July 2019 in the study population. Subsequently, an exploratory analysis of the data was carried out and a logistic regression was applied in order to determine the factors that influence students to consume heated tobacco.

Keywords: heat-not-burn tobacco; prevalence; college students



Citation: Pintado, A.S.; Sousa-Tavares, D.; Cavaco-Silva, P. Awareness and Use of Heat-Not-Burn Tobacco among Students of Egas Moniz—Cooperative of Higher Education. *Med. Sci. Forum* **2021**, *5*, 27. <https://doi.org/10.3390/msf2021005027>

Academic Editors: Helena Barroso and Cidália Castro

Published: 21 July 2021

Publisher's Note: MDPI stays neutral with regard to jurisdictional claims in published maps and institutional affiliations.



Copyright: © 2021 by the authors. Licensee MDPI, Basel, Switzerland. This article is an open access article distributed under the terms and conditions of the Creative Commons Attribution (CC BY) license (<https://creativecommons.org/licenses/by/4.0/>).

1. Introduction

Heated tobacco products (HTP) use a device that heats tobacco to generate an aerosol containing nicotine instead of burning it at significantly higher temperatures, as it happens with combustion tobacco (CT) [1]. This concept was introduced in 1988, however, only in recent years there was an exponential increase in public interest with the launch of the latest HTP in the market [2,3]. Health professionals play a key role in the fight against the tobacco epidemic [4]. The main relevance of this study lies in the fact that there are still no studies on the prevalence of HTP use among college students, in particular, healthcare students.

2. Materials and Methods

An exploratory cross-sectional analytical observational study was carried out. A questionnaire adapted from the WHO Global Health Professional Students Survey (GHPSS) was applied in person between May and July 2019 to the study population, meaning all 3rd year students enrolled at Egas Moniz—a Cooperative of Higher Education dedicated to health sciences—in the academic year 2018–2019 ($n = 389$) [5]. The main variables assessed by the questionnaire were tobacco use prevalence and the factors that influence students to consume heat-not-burn tobacco. Subsequently, an exploratory analysis of the data was carried out providing descriptive information, and a logistic regression was applied in order to determine the factors that influence students to consume heated tobacco. This study was submitted to, and approved by, the Egas Moniz Ethics Commission.

3. Results and Discussion

This study, which covered a sample of 314 participants, demonstrated that 19.93% ($n = 58$) of the students were smokers, 6.87% ($n = 20$) smoked heat-not-burn tobacco and 13.06% ($n = 38$) smoked combustion tobacco (Figure 1), thus, the prevalence of HTP represents more than a third of all smokers (34.47%). This prevalence, 6.8%, is much higher

than the prevalence of 0.5% reported recently by Gallus et al., relative to a study conducted in Portugal in 2017 [6].

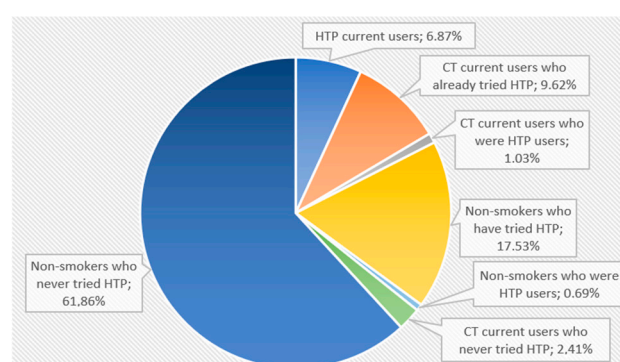


Figure 1. Prevalence of heated tobacco products use and combustion tobacco use among 3rd year students of Egas Moniz—Cooperative of Higher Education, CRL (2019).

Factors That Influence Students to Consume Heat-Not-Burn Tobacco

The students most likely to smoke HTP were the oldest (p -value = 0.070), who considered that HTP should not be banned in indoor public places (p -value < 0.001), who did not know if heated tobacco is more or less harmful compared to conventional cigarettes (p -value = 0.030), and who did not know (p -value = 0.049) or disagreed (p -value = 0.073) that switching from combustion tobacco to a HTP is an approach to smoking cessation.

This study found that about 1/5 of health professional students smoked, of which more than a third were heated tobacco users, which shows that HTP consumption is rising and presents a current public health problem in the health professional university population. As these students are the future health workforce that will provide smoking cessation support, it is important to implement not only tobacco control measures in universities, but also to reinforce academic skills in this area.

Institutional Review Board Statement: The study was conducted according to the guidelines of the Declaration of Helsinki, and approved by the Ethics Committee of Egas Moniz (protocol code n° 756 approved on 2 April 2019).

Informed Consent Statement: Informed consent was obtained from all subjects involved in the study.

Acknowledgments: The authors greatly thank the support of the Egas Moniz Management and teachers, and last but not least, the students, without which this study would have been impossible.

Conflicts of Interest: The authors declare no conflict of interest.

References

1. Ratajczak, A.; Jankowski, P.; Strus, P.; Feleszko, W. Heat Not Burn Tobacco Product—A New Global Trend: Impact of Heat-Not-Burn Tobacco Products on Public Health, a Systematic Review. *Int. J. Environ. Res. Public Health* **2020**, *17*, 409. [CrossRef]
2. Sutherland, G.; Russell, M.; Stapleton, J.; Feyerabend, C. Glycerol particle cigarettes: A less harmful option for chronic smokers. *Thorax* **1993**, *48*, 385–387. [CrossRef]
3. Pokhrel, P.; Herzog, T.A.; Kawamoto, C.T.; Fagan, P. Heat-not-burn Tobacco Products and the Increased Risk for Poly-tobacco Use. *Am. J. Health Behav.* **2021**, *45*, 195–204. [CrossRef]
4. Grech, J.; Sammut, R.; Buontempo, M.B.; Vassallo, P.; Calleja, N. Brief tobacco cessation interventions: Practices, opinions, and attitudes of healthcare professionals. *Tob. Prev. Cessat.* **2020**, *6*, 1–11. [CrossRef]
5. CDC. *Global Health Professional Students*; CDC: Atlanta, GA, USA, 2008.
6. Gallus, S.; Lugo, A.; Liu, X.; Borroni, E.; Clancy, L.; Gorini, G.; Lopez, M.J.; Odone, A.; Przewozniak, K.; Tigova, O.; et al. Use and awareness of heated tobacco products in Europe. *J. Epidemiol.* **2021**. [CrossRef]