



Original article

Self-perceived smoking cessation skills among cardiology residents in Argentina

Alan R. Sigal^{1,a}, Braian Abel Cardinali-Re^{1,a}, Lucas Campana^{1,a}, Pilar Lopez-Santi^{1,a}, Pablo Iomini^{1,a}, Celeste A. Zanoni^{1,a}, Mariana Salcerini^{1,a}, Leandro Pozzer^{1,a}, Manuel Traghetti^{1,a}, Laura Pulido^{2,b}, Daniel José Piñeiro^{3,a}, Andrés Rosende^{1,4,a}, Sebastián García-Zamora^{1,5,a}, Consejo Argentino de Residentes de Cardiología (CONAREC)

Received: July 24, 2023
Accepted: September 23, 2023
Online: September 30, 2023

ABSTRACT

Authors' affiliation

- ¹ Consejo Argentino de Residentes de Cardiología (CONAREC), Buenos Aires, Argentina.
 - ² Servicio de Neumología, Hospital Italiano de Rosario, Rosario, Argentina.
 - ³ Facultad de Medicina, Universidad de Buenos Aires (UBA), Buenos Aires, Argentina.
 - ⁴ Pan American Health Organization (PAHO), Washington DC, United States.
 - ⁵ Servicio de Cardiología, Sanatorio Delta, Rosario, Argentina.
- ^a Cardiologist
^b Pulmonologist

Correspondence

Sebastián García Zamora

E-mail

sebagz83@gmail.com

Funding

Self-financed

Conflicts of Interest

The authors declare no conflict of interest. Although Dr. Andrés Rosende is a consultant to the Pan American Health Organization, the contents of this publication do not necessarily represent the views or policies of the organization.

Cite as: Sigal AR, Cardinali-Re BA, Campana L, López-Santi P, Iomini P, Zanoni CA, et al. Self-perceived smoking cessation skills among cardiology residents in Argentina. Arch Peru Cardiol Cir Cardiovasc. 2023;4(3):1-6. doi: 10.47487/apccv.v4i3.304.



This work is licensed under a Creative Commons Attribution 4.0 International

Objective. To assess the self-perception of cardiology residents in Argentina with regard to their abilities to help their patients quit smoking, as well as their opinions about their knowledge and skills in this topic. **Materials and methods.** A cross-sectional study was conducted based on secondary data from a study conducted in five Latin American countries and Spain, focusing on information provided by cardiology residents in Argentina. Discrete variables were expressed as median and interquartile range, categorical variables were expressed as percentages, and analyzed using the chi-square test or Fisher's exact test, according to the relative frequency of the expected values. **Results.** A total of 447 residents participated; 87.5% routinely provided brief advice on smoking cessation and 11.6% used validated questionnaires to assess the degree of addiction. In addition, 32.1% reported prescribing pharmacological treatment, but 53.1% were only familiar with a single drug. When asked about their self-perception in getting their patients to quit smoking, the median response was 5 (scale 1 to 10); only 13.7% responded with a score of 8 or more. **Conclusions.** The present study suggests that cardiology residents in Argentina recognize the importance of performing smoking cessation interventions, but a high proportion of them do not feel qualified to do so.

Keywords: Tobacco Use Disorder; Tobacco Use Cessation; Cardiology; Education, Medical; Argentina (source: MeSH-NLM).

Introduction

Smoking is one of the major modifiable risk factors worldwide. It is directly attributed to 8,000,000 deaths annually, with an upward trend for the coming years⁽¹⁾. In Argentina, about 44,000 deaths per year are caused by tobacco-related diseases⁽²⁾. This addiction is directly associated with the development of cardiovascular and cerebrovascular diseases, neoplasms in different organs and respiratory diseases, among other conditions^(3,4). People who experience an adverse event related to tobacco use are particularly willing to quit. This direct link between smoking and cardiovascular disease places cardiologists in a privileged position to help their patients to quit smoking.

A study conducted in five Latin American countries and Spain⁽⁵⁾ on the training of cardiology residents in smoking cessation found that most of them consider smoking cessation a relevant topic, but a significant

percentage do not feel sufficiently qualified to address it and a large proportion of those, who do not use pharmacological therapy, claim lack of familiarity with the treatments. These findings highlight the need for improved training in smoking cessation for future cardiologists, which could have a significant impact on the prevention of cardiovascular disease.

However, there appears to be a marked imbalance between the magnitude of the tobacco consumption problem, the benefits of quitting this addiction, and the training that healthcare professionals receive in Argentina. For this reason, the aim of the present study was to assess the self-perception of cardiology residents in Argentina regarding their abilities to help their patients quit smoking, as well as their opinions about their knowledge and skills in this topic.

Materials and Methods

Design and study population

A voluntary and anonymous survey was conducted between November 2018 and January 2019 among cardiology residents, unpaid doctors, fellows, and chief of cardiology residents in public and private healthcare centers in six Spanish-speaking countries: Argentina, Chile, Spain, Mexico, Paraguay, and Uruguay⁽⁵⁾. The questionnaire was distributed using a non-probability snowball sampling method and disseminated by email and text message to all cardiology residents in these countries. The present cross-sectional study is based on a secondary data analysis of the survey, focusing on the information provided by cardiology residents in Argentina.

Study variables

A questionnaire designed specifically for the study was used, comprising 26 questions categorized into five sections: a) priority and assessment of smoking cessation; b) smoking cessation interventions; c) use of smoking cessation medications; d) participants' training and self-perception of their smoking cessation skills, and e) participants' demographics and characteristics.

The platform used to administer the survey to participants was Google Forms®.

Participants were considered former smokers if they reported having smoked in the past but had quit at least 12 months prior to responding to the survey.

In questions where participants were requested to express the significance they assigned to a specific issue, a linear scale ranging from 1 to 10 was used, where 10 representing the highest level of importance and 1 indicating the lowest.

Data analysis

Discrete variables were expressed as median and interquartile range (IQR), categorical variables were expressed as percentages,

and analyzed using the chi-square test or Fisher's exact test, depending on the relative frequency of the expected values.

A significance level of 5% was assumed for all statistical analyses. All statistical analyses were performed two-tailed. Stata version 13.0 (Stata Corp., College Station, TX, USA) was used to perform the analyses.

Ethical aspects

The survey included a preamble in which the project's objectives were detailed, and it was emphasized that participation was voluntary. Likewise, respondents were explicitly informed that their data would be handled anonymously and in accordance with national and international data protection laws. To mitigate potential response bias, identifying information such as age, gender, year of training, and training center were omitted. Finally, it was stated that respondents voluntarily agreed to participate and provided implicit consent by responding to the survey. The project received approval from the CONAREC Advisory Committee.

Results

A total of 447 cardiology residents, unpaid doctors, fellows, and chief of cardiology residents participated in the survey. Approximately one-third of the respondents were training at different sites in the Buenos Aires Province, while nearly one-fourth of them were engaged in training in the Autonomous City of Buenos Aires (CABA). **Table 1** provides details on the province of residence of all participants. Of the group surveyed, 72.0% had never smoked, 13.1% were active smokers and 14.9% were former smokers.

When questioned about the significance they attributed to smoking cessation, the median response was 10 (IQR: 8-10); only 28 participants (6.2%) scored this question below 7. A total of 87.5% of the surveyed individuals reported routinely advising their smoking patients to quit smoking. In terms of the frequency of assessing the level of patient addiction, 38.7% indicated that they consistently performed this evaluation, 27.7% reported doing it on a frequent basis, and 11.0% admitted to never engaging in such assessments. Among the respondents who reported occasionally assessing patients' addiction, the predominant approach was subjective or "without any specific method". Only 11.6% of the participants stated claimed to use a validated questionnaire for this specific purpose.

41.6% of the respondents stated that they implemented non-pharmacological interventions to assist their patients in smoking cessation. However, among the surveyed resident physicians, the most common strategy was to refer their patients

Table 1. Number of participants by province.

Province	n (447)	Percentage
Buenos Aires Province	145	32.4
Autonomous City of Buenos Aires	106	23.7
Santa Fe	44	9.8
Córdoba	31	6.9
Mendoza	30	6.7
Chaco	16	3.6
Corrientes	13	2.9
Tucumán	9	2.0
Salta	9	2.0
Neuquén	8	1.8
Misiones	8	1.8
Entre Ríos	7	1.6
Formosa	6	1.3
San Juan	6	1.3
La Rioja	3	0.7
Jujuy	3	0.7
Catamarca	2	0.4
Chubut	1	0.2

to a colleague with expertise in tobacco cessation, with 57.8% reporting this as the sole intervention they undertook (Figure 1). Nevertheless, it is worth noting that only 43.4% of the participants

had access to tobacco cessation specialists within their healthcare facility. When asked about pharmacological interventions for smoking cessation, 32.1% of the respondents indicated that they prescribed some form of treatment to help their patients in this process. 53.1% were familiar with only one smoking cessation treatment, with nicotine replacement therapy being the most commonly used pharmacological strategy (31.3%), followed by the use of bupropion (10.2%) and varenicline (4.1%). 22.4% of the surveyed individuals reported familiarity with the utilization of two pharmacological strategies for smoking cessation, while 22.5% possessed knowledge of how to use three or four pharmacological groups. Additionally, 7.5% of the participants used benzodiazepines for this purpose.

Among those who reported using pharmacological treatment for smoking cessation, 54.1% prescribed it during the inpatient period, 23.3% recommended it at the time of hospital discharge, and 22.6% at the outpatient follow-up visit.

The majority of respondents who did not use pharmacological treatment for smoking cessation stated their lack of familiarity with these treatments as the main reason (59.7%). Among the remaining group, 28.3% stated that they did not have access to these drugs at their healthcare facility or considered that their patients would face difficulties in obtaining them due to the treatment's cost. Finally, 4.3% did not use these strategies due to concerns about adverse events or an increase in cardiovascular

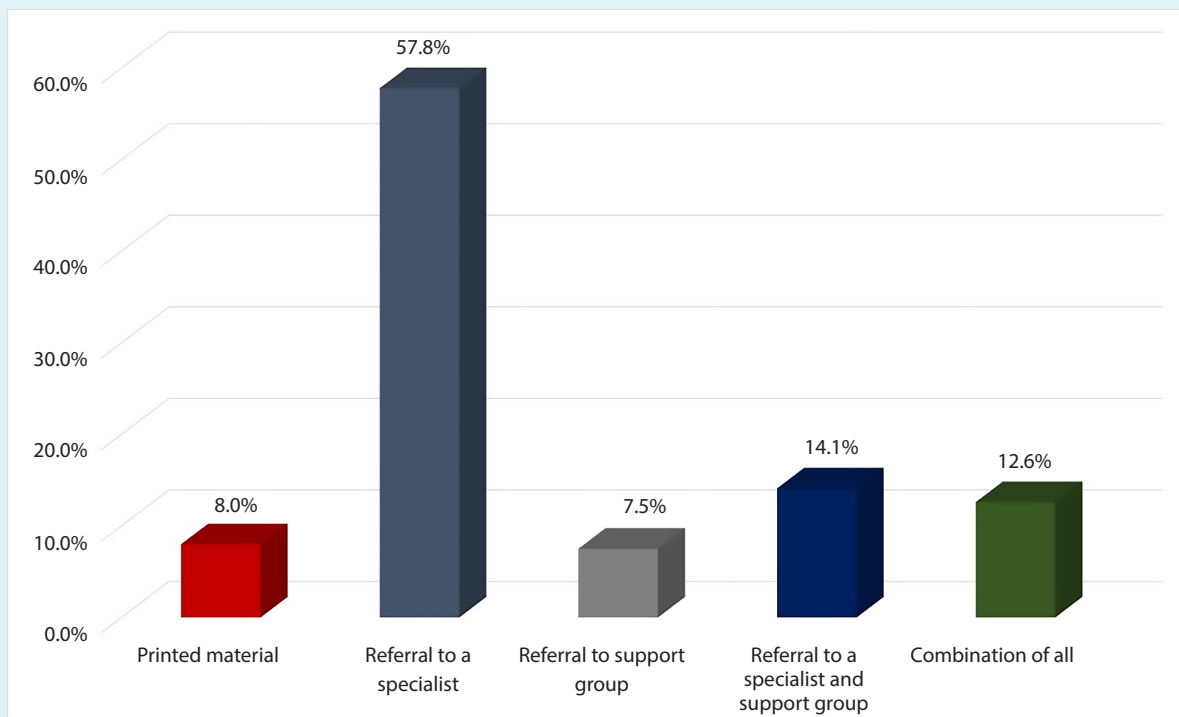


Figure 1. Non-pharmacological interventions implemented by cardiology residents for smoking cessation in their patients.

events, while the remaining 7.7% stated other reasons, such as opposition from their superiors to such prescriptions.

A total of 45.9% of the respondents claimed to have received training in tobacco cessation through formal education, including classes, in-person or online courses, literature discussions, academic meetings, or short rotations in specialized clinics. Concerning their self-assessment of preparedness to assist a smoker in quitting, the median response was 5 (IQR: 4-7), with only 13.7% of participants rating themselves with a score equal to or greater than 8 in response to this question.

Lastly, an exploration was conducted to investigate the relationship between the participants' views on the relevance of this issue in their daily practice, the priority they assigned to it in their training, their self-perception on the degree of preparation to address this problem (using a linear scale with a score from 1 to 10) and their condition in relation to tobacco use. No significant differences were observed between those participants who had never smoked, current smokers, and former smokers in terms of the priority they attributed to this issue ($p=0.443$) (**Figure 2**). The same result was observed when inquiring about their self-perception of training in this topic ($p=0.470$). However, former smokers considered this topic less relevant than those who never

smoked and current smokers (8.58 ± 1.8 compared to 9.13 ± 1.3 and 9.24 ± 1.1 , $p=0.008$).

Discussion

The present study has several important findings. Firstly, most of cardiology residents in Argentina consider smoking cessation as a highly relevant topic for their daily practice. Moreover, nine out of every ten residents who participated in the survey reported advising their smoking patients to quit. The most commonly used non-pharmacological intervention by cardiology residents involved referring their patients to other specialists for smoking cessation support. However, approximately one-third of cardiology residents indicated that they prescribed pharmacological treatments to achieve smoking cessation in their patients. Lastly, over half of the survey participants expressed a lack of confidence in their ability to assist their smoking patients in the smoking cessation process. These results highlight the need for enhanced training and support in smoking cessation for cardiology professionals in Argentina.

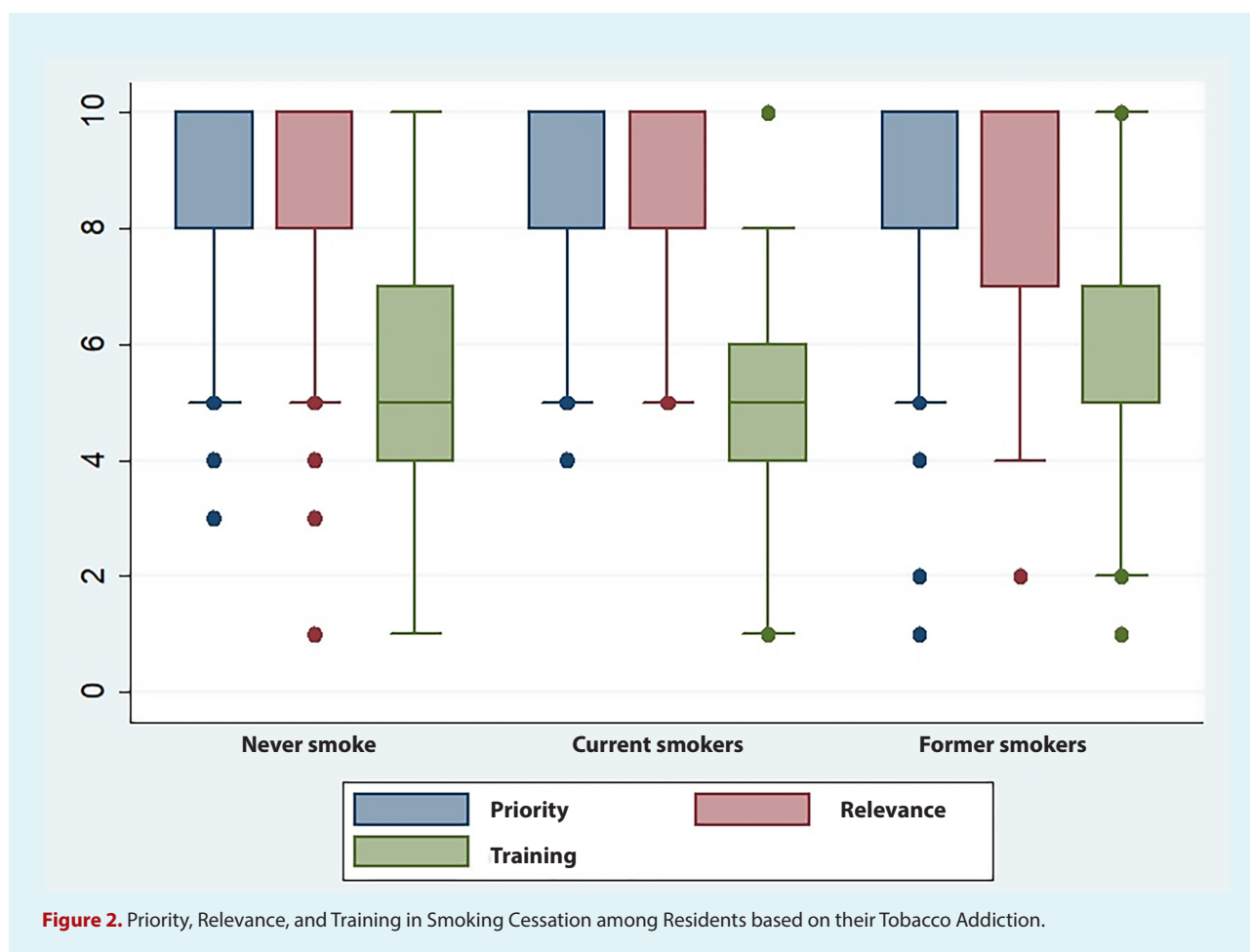


Figure 2. Priority, Relevance, and Training in Smoking Cessation among Residents based on their Tobacco Addiction.

The link between smoking and multiple health issues has been established for over half a century, yet it remains a global public health concern^(3,4). Simultaneously, the lack of training in this topic appears to be a common issue among healthcare professionals⁽⁵⁻⁷⁾. Thus, a study conducted among respiratory therapists in the United States found that over half of the institutions did not provide specific training on smoking cessation⁽⁷⁾. A similar pattern was observed in our country, where 54.1% of cardiology residents reported not having received any training in this topic.

This lack of training also extends to medical students. Richmond *et al.* conducted two surveys, with a ten-year gap, in medical schools across more than 100 countries to assess the inclusion of specific subjects or modules on smoking cessation^(8,9). In the second edition of 2009, the authors found that specific modules had increased from 11% to 27%, with 77% of institutions incorporating tobacco-related issues into other subjects, compared to 40% in the 1998 edition^(8,9). Along these lines, there is evidence that medical students who receive specific training on smoking cessation are more capable of implementing it in their clinical practice, feeling more confident and effective in assisting individuals with this problem⁽¹⁰⁾, a pattern consistent with qualified physicians⁽¹¹⁾.

Nonetheless, training is just one component of a successful approach to smoking cessation. Barua *et al.* emphasize that, in addition to training in tobacco cessation, it is crucial to assign specific roles to every professional who interacts with individuals who smoke⁽¹²⁾. This is crucial, as in our study, nearly 3 out of 5 respondents referred their patients to a specialized clinic as the sole intervention, while fewer than half of the participants had such specialists available in their healthcare facility. This underscores the numerous missed opportunities to provide brief counseling to smoking patients, a practice that should be undertaken by all healthcare professionals, as it does not require extensive or complex training^(12,13). Thus, both expert recommendations⁽¹²⁻¹⁵⁾ and specific studies^(16,17) indicate that short training programs, lasting only 2-3 hours, can be sufficient to enhance the skills of physicians from various specialties in helping their patients quit smoking^(18,19). Even non-medical personnel can play a significant role in tobacco cessation⁽²⁰⁾.

It is essential to recognize that our study has limitations that should be considered when interpreting its findings. Firstly,

since the exact number of cardiology residents in Argentina is not available, and due to the sampling method used, it was not possible to estimate the survey response rate. This introduces selection and response biases, limiting the external validity of the results. However, the proportion of residents who participated represents at least half of the cardiology residents in Argentina, which can be considered a substantial sample. Secondly, detailed participant data, including information about the institutions where they were undergoing their training, are not available. Certain characteristics, such as the year of residency or specific aspects of the training centers, likely influence the participants' knowledge of this topic. However, the potential for participant identification could have biased their responses, which is why this information was omitted. Additionally, this survey does not assess skills like empathy and active listening, which are fundamental in smoking cessation therapy. Despite the aforementioned limitations, it is worth noting that this study represents the first multicenter investigation that evaluated the smoking cessation practices of cardiology residents in Argentina.

In conclusion, the findings suggest that the majority of cardiology residents recognize the importance of receiving training in smoking cessation during their education. While many attempt to assist their smoking patients, referring them to other professionals was the most commonly used strategy. Furthermore, over half of the participants expressed insecurity about their abilities to address this addiction. We believe it is essential to further enhance understanding of this issue to reduce disparities in care and enhance interventions for individuals with tobacco addiction.

Acknowledgments

The authors extend their gratitude to all the colleagues who selflessly participated in this project, as without their valuable collaboration, it would not have been possible to carry it out.

Author contributions

Conceptualization and Methodology: SGZ and LP. Data Collection: ARS, BACR, LC, PLS, PI, CZ, MS, LP, MT, LP. Formal Analysis and Validation: SGZ, ARS, AR. Writing - Original Draft: ARS, BACR, LC, LP, DJP, AR, SGZ. Visualization: LC, PLS, PI, CZ, MS, LP, MT, LP. Writing - Review & Editing: LP, DJP, AR, SGZ.

References

1. GBD 2017 Risk Factor Collaborators. Global, regional, and national comparative risk assessment of 84 behavioural, environmental and occupational, and metabolic risks or clusters of risks for 195 countries and territories, 1990-2017: a systematic analysis for the Global Burden of Disease Study 2017. *Lancet*. 2018;392(10159):1923-1994. doi: 10.1016/S0140-6736(18)32225-6.
2. Instituto Nacional de Estadística y Censos. 4° Encuesta Nacional de Factores de Riesgo. Resultados definitivos [Internet] Argentina: Instituto Nacional de Estadística y Censos; 2019 [cited 29 June 2022]. Available in: https://www.indec.gob.ar/ftp/cuadros/publicaciones/enfr_2018_resultados_definitivos.pdf.
3. Gallucci G, Tartarone A, Lerose R, Lalinga AV, Capobianco AM. Cardiovascular risk of smoking and benefits of smoking cessation. *J Thorac Dis*. 2020;12(7):3866-3876. doi: 10.21037/jtd.2020.02.47.
4. Bejarano JM, Cuixart CB. Factores de riesgo cardiovascular y atención primaria: evaluación e intervención. *Aten Primaria*. 2011;43(12):668-77. doi: 10.1016/j.aprim.2011.10.002.

5. García-Zamora S, Lépori AJ, Jordán A, Nauhm Y, Roif R, Paredes G, et al. Manejo de la cesación tabáquica entre residentes de cardiología de Iberoamérica. *Arch Cardiol Mex*. 2021;91(4):431-438. doi: 10.24875/ACM.20000381.
6. Nims L, Jordan TR, Price JH, Dake JA, Khubchandani J. Smoking cessation education and training in obstetrics and gynecology residency programs in the United States. *J Family Med Prim Care*. 2019;8(3):1151-1158. doi: 10.4103/jfmpc.jfmpc_451_18.
7. Jordan TR, Khubchandani J, Wiblishauser M, Glassman T, Thompson A. Do respiratory therapists receive training and education in smoking cessation? A national study of post-secondary training programs. *Patient Educ Couns*. 2011;85(1):99-105. doi: 10.1016/j.pec.2010.10.022.
8. Richmond RL, Debono DS, Larcos D, Kehoe L. Worldwide survey of education on tobacco in medical schools. *Tob Control*. 1998;7(3):247-52. doi: 10.1136/tc.7.3.247.
9. Richmond R, Zwar N, Taylor R, Hunnisett J, Hyslop F. Teaching about tobacco in medical schools: a worldwide study. *Drug Alcohol Rev*. 2009;28(5):484-97. doi: 10.1111/j.1465-3362.2009.00105.x.
10. Ockene JK, Hayes RB, Churchill LC, Crawford SL, Jolicoeur DG, Murray DM, et al. Teaching Medical Students to Help Patients Quit Smoking: Outcomes of a 10-School Randomized Controlled Trial. *J Gen Intern Med*. 2016;31(2):172-181. doi: 10.1007/s11606-015-3508-y.
11. Girvalaki C, Papadakis S, Vardavas C, Pipe AL, Petridou E, Tsiligianni I, et al. Training General Practitioners in Evidence-Based Tobacco Treatment: An Evaluation of the Tobacco Treatment Training Network in Crete (TiTAN-Crete) Intervention. *Health Educ Behav*. 2018;45(6):888-897. doi: 10.1177/1090198118775481.
12. Barua RS, Rigotti NA, Benowitz NL, Cummings KM, Jazayeri MA, Morris PB, et al. 2018 ACC Expert Consensus Decision Pathway on Tobacco Cessation Treatment: A Report of the American College of Cardiology Task Force on Clinical Expert Consensus Documents. *J Am Coll Cardiol*. 2018;72(25):3332-3365. doi: 10.1016/j.jacc.2018.10.027.
13. Jiménez-Ruiz CA, Chatkin JM, Morais A, Zabert G, Rosa P, Gea J, et al. Consensus Document on Medical Faculty Education on the Treatment of Smoking. *Arch Bronconeumol (Engl Ed)*. 2020;56(12):806-811. doi: 10.1016/j.arbres.2020.04.021.
14. Leone FT, Zhang Y, Evers-Casey S, Evins AE, Eakin MN, Fathi J, et al. Initiating Pharmacologic Treatment in Tobacco-Dependent Adults. An Official American Thoracic Society Clinical Practice Guideline. *Am J Respir Crit Care Med*. 2020;202(2):e5-e31. doi: 10.1164/rccm.202005-1982ST.
15. Ministerio de Salud de la Nación. Guía de Práctica Clínica Nacional de Tratamiento de la Adicción al Tabaco 2020 [Internet]. Buenos Aires, Argentina; 2021 [cited 29 June 2022]. Available in: <https://bancos.salud.gob.ar/recurso/guia-de-practica-clinicanacional-de-tratamiento-de-la-adiccion-al-tabaco-edicion-2021>
16. Ockene JK, Quirk ME, Goldberg RJ, Kristeller JL, Donnelly G, Kalan KL, et al. A residents' training program for the development of smoking intervention skills. *Arch Intern Med*. 1988;148(5):1039-45.
17. Steinemann S, Roytman T, Chang J, Holzman J, Hishinuma E, Nagoshi M, et al. Impact of education on smoking cessation counseling by surgical residents. *Am J Surg*. 2005;189(1):44-6. doi: 10.1016/j.amjsurg.2004.03.016.
18. Panda R, Persai D, Venkatesan S. Missed opportunities for brief intervention in tobacco control in primary care: patients' perspectives from primary health care settings in India. *BMC Health Serv Res*. 2015;15:50. doi: 10.1186/s12913-015-0714-6.
19. Jamal A, Dube SR, King BA. Tobacco Use Screening and Counseling During Hospital Outpatient Visits Among US Adults, 2005-2010. *Prev Chronic Dis*. 2015;12:E132. doi: 10.5888/pcd12.140529.
20. Holliday R, Hong B, McColl E, Livingstone-Banks J, Preshaw PM. Interventions for tobacco cessation delivered by dental professionals. *Cochrane Database Syst Rev*. 2021;2(2):CD005084. doi: 10.1002/14651858.CD005084.pub4.