

# Volunteering and health promotion: high school students for a tobacco free generation

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## Abstract

**Background.** Volunteering includes wide-ranging activities including one which contributes to the achievement of a shared goal in Tobacco Control, a Tobacco Free Generation by 2040 for which Voluntary Youth Engagement is crucial.

**Aims.** 1) Presentation of the involvement of high school students for the development and promotion of a video in support of the signature collection process of the European Citizen Initiative: Call To Achieve A Tobacco-Free Environment And The First European Tobacco-Free Generation By 2030, in order to offer examples and motivation for similar activities among youth. 2) Evaluation of the opinions of high-school students, teachers and parents from a high-school in Cluj-Napoca, Romania on volunteering and health promotion activities. 3) Assessment of the popularity of different topics related to health, nature, smoking and volunteering in Romania over the course of 7 years (Jan. 2016-Jan. 2023) using data from Google Trends.

**Methods.** A number of 7 high school students from George Coşbuc National College supported the European Citizen Initiative: Call To Achieve A Tobacco-Free Environment And The First European Tobacco-Free Generation By 2030 by filming a presentation video. The activity was presented during an event organised at school. A multiple-choice questionnaire was distributed among parents, teachers and students to assess their opinion on volunteering, activities to promote health and the factors that influence the choice to take part. Google Trends was used to assess topics of interest in the Romanian population (2016-2023). Relative Search Volume (RSV) is the measure that indicates the popularity of a topic (1-lowest- to 100 -highest).

**Results.** Out of 44 participants (27 Students, 7 Teachers and 10 Parents) the majority agreed that volunteering and health promotion activities are important for the self-development of school students. Parents and teachers estimated to a higher extent the impact parents and colleagues/friends have on the participation in such activities. Google Trends data showed that Nature and Health are favored over Smoking. Volunteering had the lowest RSV.

**Conclusions.** Volunteering is considered beneficial. Topics: Health and Nature are popular in Romania. Considering students' interests, popular topics and trends is important for youth mobilization.

**Keywords:** youth, volunteering, health promotion, trends, high-school students, youth mobilization.

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## Introduction

According to Europe's Beating Cancer Plan, the European Commission aims to create a Tobacco Free Generation by 2040 (smoking prevalence <5% of the population), by strengthening regulatory instruments (1).

Through the Lisbon Treaty (Treaty on the Functioning of the European Union-TFEU) signed on the 1<sup>st</sup> December 2009 the European Union (EU), previously named European Community, changed the way the EU is exerting its power and further develops the powers of the EU. One of the main achievements is the development of new institutional set-ups and modified decision-making

processes, aimed to increase citizens' participation in the democracy as well as their protection through improved efficiency and transparency (2).

Starting with 2012, the European Citizens Initiative (ECI), promotes the implications of citizens in the democratic decision-making process, and represents an important result of the Lisbon Treaty (Greenwood, 2018). The secondary objectives of ECIs are to foster collaboration among like-minded people, facilitate debates at EU level on topics close to citizens' interest and developing an EU public sphere (3). In Fig. 1 the process of an ECI is explained.

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Fig. 1 – The European Citizens Initiative (ECI) process.

The initiative can be proposed to the EU Commission, who reserves the right to approve the registration of the initiative, before and during this phase the organizers should prepare a network among at least 7 EU countries and plan ahead to optimize the chances of success. A ECI is successful if it reaches the minimum of 1 Million signatures from at least 7 EU countries during one year since successful registration of the ECI. Based on the population size of each country, a minimum threshold of signatures has to be collected from the respective country. If this threshold isn't passed, it can't be considered part of the 7 countries required for the success of the ECI. At any point the ECI can be submitted (latest one year since the registration of the initiative), following an immediate end of the signature collection process. The EU Commission will verify the signatures (eliminate duplicates, verify eligibility) and communicate the final result of the ECI (number of verified signatures collected). If the initiative is successful after the previous step, meetings with representatives of the EU Commission will be organized within 1 month, within 3 months the initiative will be presented to the EU Parliament and within 6 months the EU Commission will issue a proposal of action to be taken in response to the ECI. The EU is not legally obligated to act upon the proposal of the EC (3); (Greenwood, 2018).

The European Citizens Initiative *Call for a Tobacco Free Europe by 2030* (ECI-TFE), represented a collective effort of multiple nongovernmental organizations and institutions to collect at least 1 million signatures by January 2024 to put the European Commission under obligation to debate on the objectives of the initiative (4):

1. Promote the first Tobacco-Free European generation by 2028, ending the sale of tobacco and nicotine products to citizens born since 2010.
2. Create a European Net of tobacco-free and butts-free beaches and riverbanks, making these spaces healthier and environmentally sustainable.
3. Establish a European Net of tobacco-free and butts-free National Parks making them healthier and reducing contamination and risk of fires.
4. Extend outdoor smoke and vapor free spaces, especially those frequented by minors (parks, swimming pools, sports events and centers, shows and restaurants terraces).
5. Eliminate tobacco advertising and presence in audiovisual productions, social media, specially addressing covert advertising through influencers and product

placement.

6. Finance R & D projects for diseases caused by tobacco use to improve their prognosis and make them curable.

Various difficulties to collect the required signatures have been acknowledged by the EC, including costs for organizers and low awareness about the instrument among citizens (3) Therefore, a group of 7 high school students from George Cosbuc National College (GCNC) from Cluj-Napoca, decided to contribute to support the ECI TFE by developing a video aimed to collect signatures, raise awareness on the initiative and its objectives.

Youth may play an important role in volunteering activities for health promotion, having the potential to be visionary and creative agents of change, important human resources and role models for their peers (Lotrean et al., 2010; Clausen et al, 2019).

According to Eurostat 2015, Romania shows the 26th lowest amount of formal volunteers aged between 16-24 years (8.3%), with even lower percentage of informal volunteers (7.4%). The differences observed between different EU member states may be attributed to different cultural or social structures (5).

The use of the term *voluntary work* by the communist regime to describe unpaid mandatory work and low levels of education and poverty during the communist time period, according to Voicu & Voicu (2003), might be factors that induced some repulsion towards voluntary work/volunteering and represent possible explanations for the consistently low percentage of formal and informal volunteers.

Since the fall of the communist regime in 1989, major changes in the Romanian education system took place with the purpose of adopting the Bologna and Lisbon standards for education (Drăgoescu 2013) while volunteering was not a term to cover for the enforcement of unpaid mandatory work. Despite these major changes, volunteering seems to remain unpopular among youth in Romania.

Furthermore, to create engaging content and to reach a large audience, addressing the needs and interest of the target audience is crucial (Lotrean et al., 2010). To evaluate the popularity of topics, identifying topics of interest, Google Trends could be used (Nutu et al., 2014; Dera & Balwicki, 2023; Troelstra et al., 2016; Ward et al., 2018). Google trends is an analytical web search query tool, which measures the Relative Search Volume (RSV) in a country at a certain point in time.

## Hypothesis

This paper is focusing on the following hypothesis:

1. Presentation of the involvement of high school students for the development and promotion of a video in support of the signature collection process of the ECI-TFE, in order to offer examples and motivation for similar activities among youth

2. Evaluation of the opinions of high-school students, teachers and parents from a high-school in Cluj-Napoca, Romania on volunteering and health promotion activities.

3. Assessment of the popularity of different topics related to health, nature, smoking and volunteering in Romania over the course of 7 years (Jan. 2016- Jan. 2023) using data from Google Trends.

## Material and Methods

### Research protocol

#### a) *Period and place of the research*

At George Cosbuc National College from Cluj-Napoca, Romania there is one day each year dedicated to celebrating the foundation of the school, the so called "school day". During this event both high school students and teachers present their activities from the past year or organize cultural and scientific activities. The families of the high school students and teachers, but also past graduates of the high school are invited to join the event.

In June 2023 the students' council of George Cosbuc National College from Cluj-Napoca, Romania also presented the ECI-TFE, as well as the realization of the video developed by high school students to support the signing of the initiative, while encouraging them to sign the initiative. At the same time, students, teachers and parents were invited to fill an anonymous self-administered questionnaire assessing their opinions about involvement of youth in volunteering and health promotion activities, as well as about the activity developed by students' council. Approval for both the activity and data collection was offered by school directorate.

On the other hand, the popularity of different topics related to health, nature, smoking and volunteering in Romania over the course of 7 years (Jan. 2016- Jan. 2023) was assessed using data from Google Trends

#### b) *Subjects and groups*

In 2023, at the School Days of George Cosbuc National College (GCNC), 44 participants (27 high-school students, 7 teachers and 10 parents) filled in a questionnaire to assess their opinion on volunteering and health promotion activities, but also their opinion about the event.

#### c) *Applied tests (Used instruments)*

First, in order to assess the opinions of school students, teachers and parents an anonymous questionnaire was used. The questionnaire was developed specifically for this study, since a specific health promotion activity was assessed (first author). It had 11 items and included questions regarding gender, category (school student, teacher or parent), opinions about the importance of health promotion activities and volunteering on the self-development of high school students, about the impact of teachers, colleagues and friends but also parents on the

decision-making process of participating in voluntary and health promotion work. Finally, it assessed the opinions regarding the capacity of the event to raise awareness about volunteering and health promotion activities developed by high school students at GCNC as well as general impression about the volunteering and health promotion activities targeting tobacco control and the support of European Citizens Initiative *Call for a Tobacco Free Europe by 2030* (ECI-TFE). High school students were also asked about their intention to participate in future volunteering and health promotion activities and were offered the possibility to be contacted to participate in further activities, by leaving an e-Mail address at the bottom of the questionnaire.

Second, Google Trends, open access web search query tool, assesses the search interest of Google Platforms (Web Search, Image Search, Search on Google News, Search on Google Shopping or Search on Youtube) users from a country during a specific time period. The measure used for assessment is the *Relative search volume* (RSV), which is a normalized percentage of searches in proportion to all searches at a specific time in a specific location. Its values range from 1 to 100, 0 means no data is available (duplicate searches by the same user are not included). It is calculated differently for terms and for topics. Topics are a group of terms which share the same concept in all languages (*smoking, fumat*, are both considered, when analyzing the topic *smoking*, since *fumat* means *smoking* in Romanian), while terms include only searches that totally match the chosen term (for instance *Smoking* is not the same as *smoking*, since one letter is capitalized in the first one, but not in the second). The RSV can be measured individually for a topic/terms, or the RSV can be measured by comparing multiple topics or multiple terms (terms cannot be compared with topics and vice versa).

#### d) *Statistical processing*

Data were analyzed using statistical program SPSS 26 and statistical significance was considered at  $p < .05$ . Opinions of students, teachers and parents were analyzed using descriptive statistics as well as Pearson bivariate correlations in order to assess factors which influence these opinions as well as the correlations between several opinions.

Google Trends data has been analyzed using descriptive statistics and Time series analysis in SPSS26. Time series analysis refers to visualization of the evolution of RSV during a set time frame, the elimination of seasonal components using additive seasonal decomposition and elimination of seasonality and trend using differencing. Fig. 2 presents the study methodology.

## Results

### *Video development and promotion*

A group of high school students from George Cosbuc National College (GCNC) from Cluj-Napoca, Romania, coordinated by a member of the European Network for Smoking and Tobacco prevention Youth Group (ENSPNext), decided to start a project to support the ECI-TFE. The main goal of this project was the realization of an engaging and creative-qualitative video

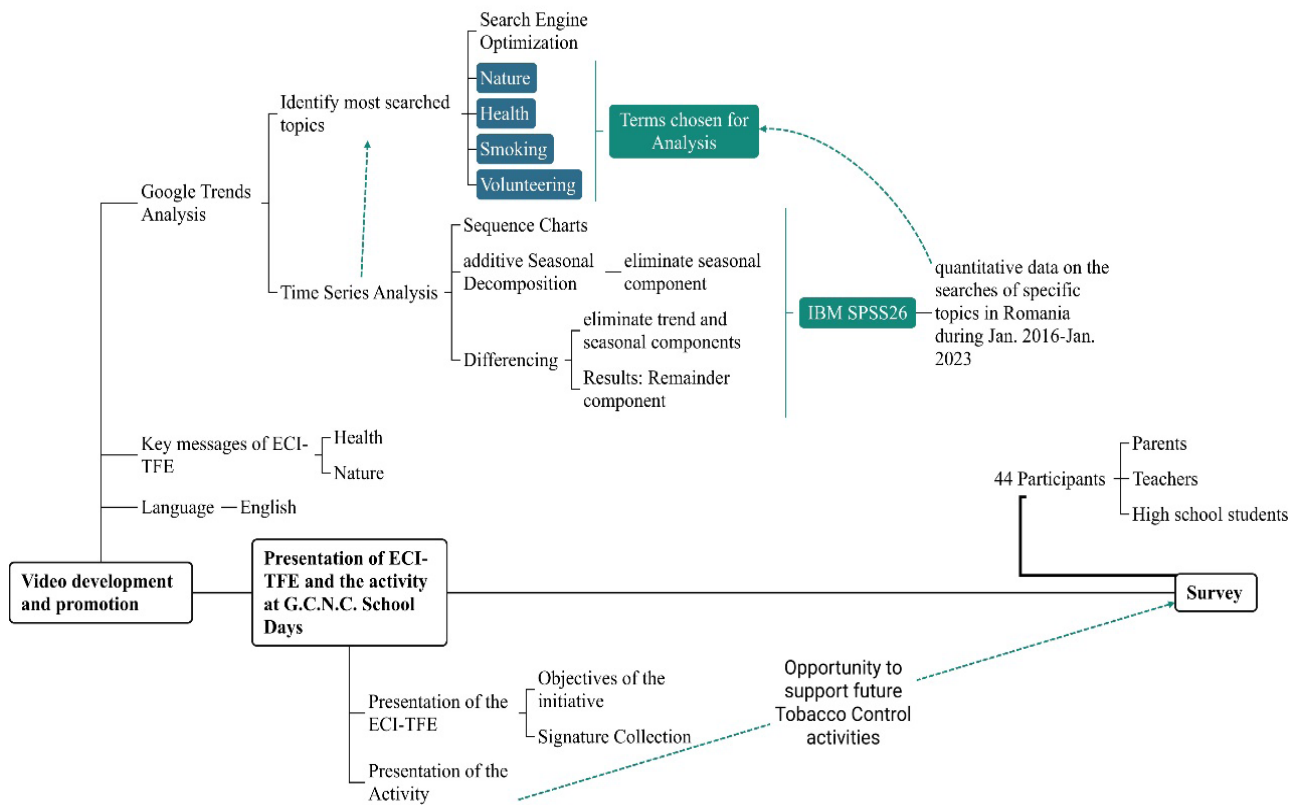


Fig. 2 – Study methodology.

for the ECI-TFE, while also raising awareness among high school students on the harms of tobacco and related products, encouraging them to say no to smoking and to stand against the tobacco industry manipulation tactics. Working on a voluntary basis, including the video studio (also conducted by one of the students) costs have been kept at a minimum. The involvement of a (adult) medical professional has been requested to further support the message. The process was initiated and coordinated by a high-school students who was also a member of the youth group of European Network for Smoking and Tobacco Prevention (ENSP) called ENSPNext. As most of the participants were underage, parental consent has been required for participation.

#### *Opinions of students, teachers, and parents*

As presented in Table I, the majority of the participants strongly agreed that volunteering as well as involvement in health promotion activities are important for self-development of school students. Around two thirds of participants strongly agreed that teachers, parents and colleagues/friends play an important role in the decision-making process of the high school students to join volunteering and health promotion activities.

Table II shows that there were no gender differences in opinions regarding these aspects, but the group consisting of parents and teachers was more convinced about the role of parents and colleagues/friends in influencing school students to get involved in volunteering and health

promotion activities. At the same time, those who were more convinced about the role of getting involved in volunteering and health promotion activities were also more convinced about the role played by teachers and colleagues/friends.

Half of the participants (54.5%) considered that this event made them more aware to a high extent about the volunteering and health promotion activities developed by the school students from GCNC, while the other considered that this was made at quite a high extent.

A percentage of 63.6% had a very good impression about the volunteering and health promotion activities developed by school students presented during the event, 34.1% had a good impression and 2.3% did not know what to say. There were no gender differences as well as no differences between school students and teachers/parents with regard to these opinions. Those who were more convinced about the role of volunteering and health promotion for self-development of school students were also more likely to declare that the event made them more aware about the volunteering and health promotion activities developed by the students of GCNC. There was also positive correlation between opinion regarding the awareness raised by the event and the impression about the event (Table II).

A number of 21 out of 27 high-school students declared their interest to participate in future activities, but only 10 wrote their contact information.

Table I

Opinions	Opinion about volunteering and health promotion activities.				
	I totally Agree %	I partially Agree %	I do not Know %	I partially Disagree %	I totally Disagree %
Volunteering is important for self-development of school students	88.6	11.4	0	0	0
Involvement in health promotion activities is important for self development of school students	84.1	15.9	0	0	0
Teachers play an important role in motivating school students to participate in volunteering and health promotion activities	70.5	29.5	0	0	0
Parents play an important role in motivating school students to participate in volunteering and health promotion activities	68.2	27.3	2.3	2.3	0
Colleagues/friends play an important role in motivating school students to participate in volunteering and health promotion activities	65.9	29.5	4.6	0	0

Table II

Factors influencing participants' opinions-results of bivariate correlation.

Opinions	<sup>4</sup> Category	<sup>5</sup> Gender	Influence Teachers	Influence Parents	Influence Colleagues /Friends	Event-Awareness	Event-Opinion
<sup>1</sup> Volunteering-Self-development	NS	NS	NS	0.339	NS	0.345	NS
<sup>1</sup> Health Promotion-Self-development	NS	NS	NS	0.412	NS	0.358	NS
<sup>1</sup> Influence-Teachers	NS	NS	NS	NS	NS	NS	NS
<sup>1</sup> Influence-Parents	-0.329	NS	NS	NS	NS	NS	NS
<sup>1</sup> Influence-Colleagues/Friends	-0.291	NS	NS	NS	NS	NS	NS
<sup>2</sup> Event-awareness	NS	NS	NS	NS	NS	NS	0.385
<sup>3</sup> Event-opinion	NS	NS	NS	NS	NS	0.385	NS

## Legend

<sup>1</sup>: -2: I disagree totally, -1: I disagree partially, 0: I don't know, 1: I agree partially, 2: I agree totally;

<sup>2</sup>: 0: To no extent, 1: To a little extent, 2: To some extent, 3: To a big extent;

<sup>3</sup>: -1: Not very good, 0: I don't know, 1: Good, 2: Very good;

<sup>4</sup>: 1:Teacher/parent 2: High school;

<sup>5</sup>: 0:Female; 1:Male; NS-non-significant (Pearson correlation coefficients are depicted only for significant correlation.

## Google trends analyses

The results of RSV of the topics *Volunteering*, *Health*, *Nature* and *Smoking* measured in comparison and individually are found in Fig. 3 and Table III. The lowest Minimum and Maximum was observed for Volunteering, when measuring the RSV for all topics together in comparison. When measuring individually, Nature presented the lowest minimum, all topics measured individually reached RSV 100 at least once during the measured time period.

Through comparison (simultaneous analysis of topics on Google Trends, leading to an normalized RSV in proportion to the topics chosen for analysis) of the topics showed that *Health* presented the highest RSV over time, the topic *Nature* showed lower scores, until surpassing *Health* in January 2022 until June 2022 surpassing *Health* again in August 2022. Smoking surpassed *Nature* once in March 2016, *Health* presented consistently a higher RSV than *Smoking* and *Volunteering* (Fig. 4). Over the chosen time period, Volunteering had the lowest RSV, increasing in values over Smoking in February 2022. Adjusting the data seasonally does not change these results.

As presented in Fig. 5, measuring RSV individually for topics over time showed several variations. Volunteering RSV showed seasonal variations: decrease during December and January, while increasing after January. Non-seasonal changes were also observed: in February 2020 a big decrease was noticed, while December-February 2022 a big increase happened. After eliminating the trend and seasonal component through differencing, it became clear that after the 2 non-seasonal changes the values of RSV didn't lead to a disruption of variation, as the RSV returned to the initial range of values.

Smoking presented low RSV until March 2016, where it obtained RSV 100 for the only time. After this short increase, the RSV consistently reached lower values than before March 2016. The seasonal component is very little for the RSV of *Smoking* as a topic (Fig. 5).

Health presented a strong seasonal component, which inconsistent variations over the chosen time period. As for Nature, a weak seasonal component is observed. It presents two increases in January 2022 and August 2022. This increase in RSV is permanent, as the values did not return to the initial range (Fig. 5).

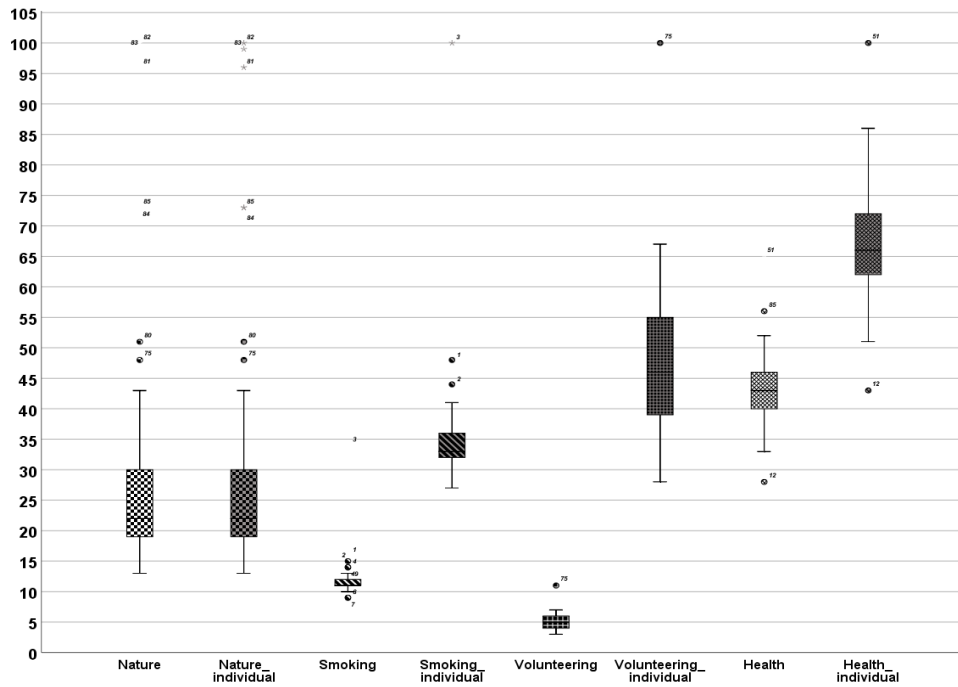


Fig. 3 – Descriptive statistics of RSV (individual vs together).

Table III  
Descriptive statistics of RSV (individual vs together) in connection with Fig. 3.

Statistical indicators	Nature	Nature (Individual)	Smoking	Smoking (Individual)	Volunteering	Volunteering (individual)	Health	Health (individual)
Minimum	13	13	9	27	3	28	28	85
Q1	19	19	11	32	4	39	40	62
Median	22	22	11	33	5	46	43	66
Q3	30	30	12	36	6	55	46.25	72
Maximum	100	100	34	100	11	100	65	100
Mean	28.06	28.06	11.75	34.51	4.99	46.94	42.75	66.2
Std.Deviation	17.41	17.41	2.69	7.96	1.23	11.14	5.27	8.28

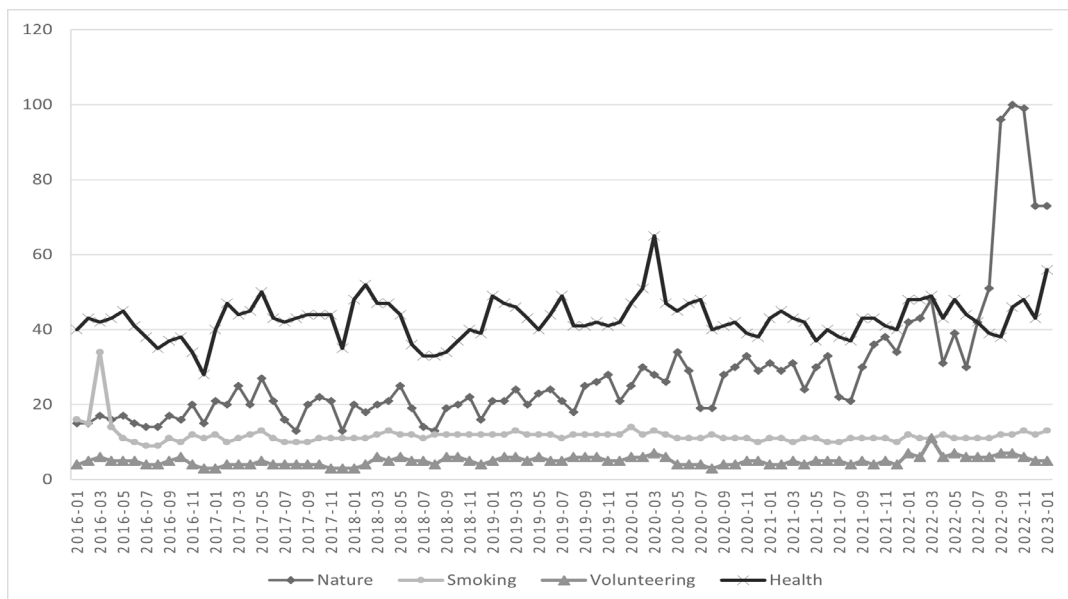


Fig. 4 – RSV comparison between topics (together).

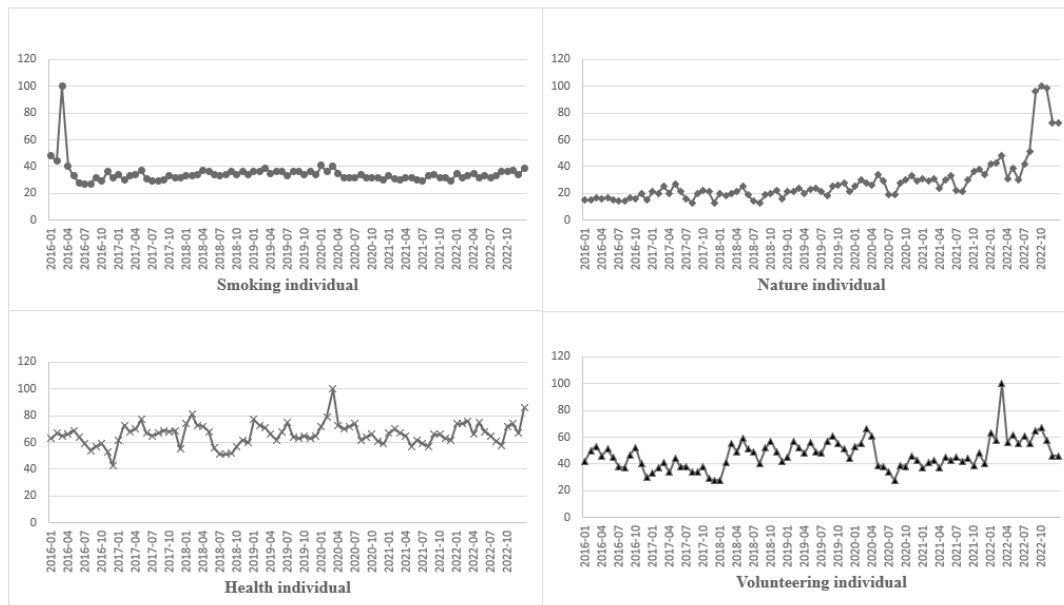


Fig. 5 – RSV comparison between topics (individual).

## Discussion

This study evidences a remarkable effort of Romanian high-school students in supporting the European Citizens Initiative: Call for a tobacco free Europe by 2030. The realization of a promotion video is associated with high cost for requisites, actors, the videographer, editor and sometimes for the filming location (studio, rented rooms etc.). The publication of audio-visual content on the internet is easy, but reaching a large audience and engaging them is a very difficult and resource-consuming effort. As non-profit organizations have fewer financial resources than the tobacco industry, realizing qualitative and engaging content on a regular basis is rather difficult. Hence, the involvement of high school students increased the capacity of producing such activities and relevant materials. In order to increase awareness and support of the high school students, teachers and parents from one high school of Romania for the initiative, the opportunity of an event organized at school was used to present the initiative and the video created by the Romanian high school students. The results of the study show that the majority of participant who filled in the evaluation questionnaire declared that this presentation increased their awareness about the volunteering and health promotion activities developed by high-school students and also had a good or very good impression about these activities. This encourages future involvement of high school students in volunteering activities, as well as ways of presenting their activities and results to the community of school students, teachers, and parents.

Involving of high school students in volunteering activities can be beneficial both for them and the school or the community (Claybourne, 2022). Several school or organizations offer volunteering opportunities for

high-school students in different countries, including possibility to be involved in health promotion activities, but few data are available to the Romanian context.

Our study investigated on a small sample the opinions of high-school students, teachers and parents about volunteering and health promotion activities, showing that they recognize their role for self-development of school students and understand that teachers, parents or colleagues/friends can motivate school students to get involved in such activities, parents and teachers being more convinced about the role of teachers and colleagues/friends. Moreover, many of the high school students who filled in the evaluation questionnaire expressed their intention to get involved in such activities in the future, but only one out of three indicated their email to receive further information. This underlines the need of planning several volunteering and health promotion activities by schools in cooperation with academia, governmental and non-governmental organizations as well as appropriate communication, training and motivation of high school students to move from intentions to actions with regard to volunteering and health promotion activities.

The results of Google trends analyses show that in Romania Health and Nature were the most popular topics, while smoking and volunteering presented lower popularity. Strong differences in variations appear between topics, as the seasonal component is not equally representative of the RSV and as strong non-seasonal variations were not similar. This study encourages health professionals, NGOs, universities, and institutes to include high-school students in volunteering and health promotion activities. An assessment of the popularity of topics might provide valuable insight into the search behavior of a population before, during and after events affecting the study population significantly.

Google Trends is an open-access and easy to use database, with relevance for NGO's, institutions and other entities active in tobacco control trying to develop effective and engaging (online and on-site) campaigns and activities, but also an accessible method for research (Alibudbud, 2023). Using Google Trends data, evidence-based decision making in the process of project and campaign development is facilitated, while research proposals can be justified using highly actual data, therefore possibly increasing the chances of applying for grants successfully. Though, there are significant limitations to using Google Trends for these purposes. First, interpreting the RSV correctly and eliminating seasonal components and trends is difficult, since advanced statistical knowledge and skills are required to do so correctly. Secondly, the RSV is a relative measure of the popularity of a term or topic, therefore is not able but to remotely compare and appreciate the popularity of a term or topic during a time frame at a certain location. Further limitations include the limitation to Google Platforms, validity concerns in areas with low internet penetration and limited transparency regarding the algorithm (Nuti et al., 2014; Kunst et al., 2019; Ayers et al., 2016). Future research should focus on assessing Google Trends as a potential tool to advance tobacco control campaigns and research. Developing methods for forecasting RSV through modelling might prove beneficial for future research activities.

This study has several limitations: the small sample size as well as the bias that might arise from the fact that the students, teachers and parents who accepted to fill in the questionnaire could be those who were more interested by this kind of topic. Nevertheless, it is an exploratory study which opens the door to further assessments in this area.

## Conclusions

1. High school students from George Cosbuc National College from Cluj-Napoca Romania were involved in creating a video, as well as volunteering activities to promote the European Citizen Initiative: Call To Achieve A Tobacco-Free Environment And The First European Tobacco-Free Generation By 2030.

2. Romanian high school students, teachers and parents recognize the importance of volunteering and health promotion activities for self-development of school students, but more efforts and collaboration between schools, academia, governmental and non-governmental organizations are needed in order to help the transition from awareness and intention to direct involvement of high school students in such activities

3. Google Trends analyses show that Health and Nature are popular topics in Romania; considering students' interests, popular topics and trends are important for youth mobilization.

## Conflict of interest

None to declare.

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