

Attitudes for Online Self-Medication: COVID-19 Impact in Bulgaria

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Abstract

Objectives: Our aim was to study online self-medication attitudes in Bulgaria towards weight management and stimulation of immune system during COVID-19 pandemic.

Method: A short anonymous online survey was published in popular lifestyle and news sites for 1 month. Using HTML5 banner technology, a banner survey was programmed, measuring and collecting the data from user's behavior and evaluated the number of interactions and answers received.

Results: The survey was shown 4,449,653 times and had 33544 unique interactions. 56.9% of people, who answered the first question, refrain from online self-medication. Majority of users, who answered positive, would purchase online a weight control medication or supplement in order to stay in shape and immune stimulants to solve health problem.

Conclusion: Increased internet usage provides opportunities for health promotion campaigns, where healthcare providers can take a major part. Still risks from online self-medications are much greater than potential benefits.

Practice implications: The respondents were targeted at the place of their activity online and therefore the answers were genuine and honest. The high activity proved digital channels potential for both receiving and providing health information.

Keywords: Self-medication; Online medication purchase; Patient attitudes; Weight control; COVID-19 impact

Introduction

Overweight and obesity are a major public health problem, annually leading to 2.8 million of deaths worldwide. When studying the impact of nutrients in the context of the global burden of disease, poor eating habits are responsible for more deaths than any other changing risk factor for non-communicable diseases, except for smoking. Obesity (high BMI score) and related complications can be prevented by lifestyle changes and increased physical activity.

Current COVID-19 pandemic affects all aspects of the health care system and social life. Isolation and social distancing paved the way to several new challenges. Difficult access to health care and medicines' shortages were seen. Life and nutrition habits have changed during the lockdown, sports activities decreased and use of digital channels increased significantly. Restaurants and fast food providers were closed, which led to consumption of home prepared high-quality food but at increased number of meals. Social isolation and fear to visit hospitals forced people to look more often for health advices and solutions online. Internet and social media give access to vast information resources and applications, where various medications and supplements are advertised. At the same time, it is not always clear what is the quality control of the offered goods and services or whether high ethical standards are maintained. The question for verification of online information sources and the potential risk/benefit of it remains open. Objective Our aim was to study online self-medication attitudes in Bulgaria towards weight management and stimulation of immune system. We also wanted to deeper understand the motivation of one's decision to purchase or not medicinal products or supplements via internet and to report potential adverse events [1].

Materials and Methods

In collaboration with easy ads, online platform for internet advertising, we developed an online survey with four closed questions, each giving three options to answer. For the research we used the HTML 5 banner technology, a banner survey was programmed, measuring and collecting the data from user's behavior on the creative.

First question: I buy medications or supplements online:

- For weight loss (group A)

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- For stimulation of immune system (group B)
- I don't buy medications online (group C)

The user can choose one of the three listed options. Clicking on the answer leads to the next question.

Second question group A: For weight loss, because:

- I want to get in shape
- I have health problem
- My doctor recommended the product

Second question group B: For stimulation of immune system because

- I read that it is important
- I have health problem
- My doctor recommended the product

Second question group C: I don't purchase because

- I have a bad previous experience
- I don't trust online stores
- I consult doctor or pharmacist in advance

The third question is equal for the first two groups:

Third question (group A and group B): Did it have an effect?

- Yes, I achieved a result
- It had an effect, but I got an adverse reaction
- It had no effect

Fourth question (group A and group B) and third question group C: Have you reported adverse events?

- Yes, to manufacturer
- Yes, to RA
- No

Online purchase of prescription medicines in Bulgaria is prohibited; therefore, the term medication is used for OTC products only [2]. The survey was published online for one month *via* two main channels:

- Lifestyle and women websites
- News websites

Results and Discussion

Each subsequent answer in the survey is included in the total number of interactions. For example, if a user has answered all possible questions, he/she will have at least three interactions with the banner and one unique interaction [3-6]. Similar results are seen from both campaigns (Figure 1 and Table 1).

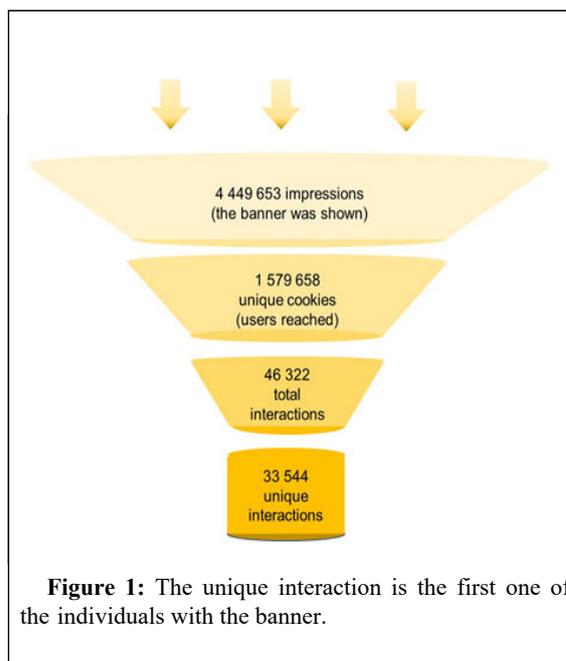


Figure 1: The unique interaction is the first one of the individuals with the banner.

Survey	Lifestyle campaign	News sites campaign	Total
Impressions	2899119	1550534	4449653
Unique interactions	21252	12292	33544
First question: I buy medications or supplements online			
For weight loss (group A)	1173	366	1539
For stimulation of immune system (group B)	1085	461	1546
I don't buy medications online (group C)	2722	1350	4072
Second question group A: For weight loss, because			
I want to get in shape	366	103	469
I have health problem	86	34	120
My doctor recommended the product	10	6	16
Second question group B: For stimulation of immune system because			
I read that it is important	161	82	234

I have health problem	234	124	358
My doctor recommended the product	56	16	72
Second question group C: I don't purchase because			
I have a bad previous experience	60	25	85
I don't trust online stores	724	350	1084
I consult doctor or pharmacist in advance	779	359	1138
Third question (group A and group B): Did it have an effect?			
Yes, I achieved a result	372	158	530
It had an effect, but I got an adverse reaction	158	35	136
It had no effect	202	77	279
Fourth question (group A and group B) and third question group C: Have you reported adverse events?			
Yes, to manufacturer	8	6	14
Yes, to RA	24	10	34
No	46	14	60

Table 1: Number of answers by question and campaign.

56.9% of users, who answered the first question, do not purchase medication and supplements online. This shows that Bulgarian patients recognize and respect healthcare specialist's information and advice. This conclusion is confirmed by other answers provided. 79% of those, who buy online slimming products, are doing it in order to get in shape and not for treating purposes [7-9]. Stress and fear of an uncontrolled pandemic provokes people to try dealing with the issue on their own, where strengthening the immune system seems like a logical solution. 358 (53.2%) of all those who answered that they order medication/supplements to strengthen immunity, believe that they have a health problem and 39.7% of them are influenced by other information channels [10].

46.9% of those, who answered that they do not purchase medication online, consult in advance their healthcare professional, while 49.3% of the same groups do not trust online shops for purchasing of medications. Regarding the achieved results 56.1% of customers, who answered the third question, have received the expected outcome, while 29.5% were disappointed and 14.4% had both effect and adverse reaction [11-13]. 55.6% of those, who answered the last question, did not report AE. Further investigations will be needed to define the reasons of low report ability of safety related information. Potential motivation of passive attitude is related from one side to patient's willingness to remain anonymous and not to share both his/her concerns and medication attempts and from other side to lack user friendly AE reporting options on web sites, that promote herbal medicines and supplements [14,15].

Staying at home and reduced physical activity during the COVID-19 pandemic posed a challenge to weight management. Bulgarian patients are interested in discussions and online training on healthy eating and lifestyle and tend to support the attempts to maintain the figure with online orders of supplements and medications, but not for solving a health problem.

Conclusion

Herbal or natural supplements are used worldwide, but evidence supporting their clinical efficacy is limited. Many herbal supplements are now being promoted as an immune booster against coronavirus, claiming to increase patients' natural defense and to decrease possible clinical symptoms in case of eventual infection. Safety and proper use of herbal and nutritional additives could not be diligently monitored online. Low level of adverse event reporting is contributing to uncertainty in the risk/benefit profile of internet promoted supplements.

Internet and social media are widely accepted and medical professionals can use these channels to conduct health promotion campaigns. Weight gain and diet mistakes are common and social media can be a potential tool to facilitate and support a healthier lifestyle, when provided by legitimate sources and strictly following regulatory requirements.

Practice Implications

This study gives large scale information. The survey was conducted in online environment, which shows that respondents are themselves active online users and potential shoppers, therefore they are relevant statistical sample. The survey was anonymous and no personal data were collected, so the honesty of all provided answers was ensured.

Due to unique situation during lock down, no similar studies were performed in Bulgaria before and limited data are available worldwide.

Study Limitations

The survey was performed over short period of time-1 month. No demographic data were collected so further studies will be needed to assess self-medication attitudes distribution by age or by other

indicators. Further studies will be needed to evaluate AE reporting attitudes.

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Ethical Approval and Competing Interests

The survey was conducted using publicly available online sites and was subject to voluntary participation. It did not collect any PI/PII or SPII. No intervention was performed and no medication has been applied, therefore no ethical committee approval was needed. We confirm no competing interests.

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