DIGITAL INJECTION OF UNCERTAINTY: THE INFLUENCE OF SOCIAL MEDIA ON VACCINATION HESITANCY IN THE EUROPEAN UNION

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Abstract: *The influence of social media on vaccine hesitant users is concerning, as it most often negatively affects the decision about vaccination of oneself and their children, encourages the spread of misinformation and leads to the endangerment of the population. Giving all the potential that the online sphere obtains, this work is meant to bring awareness of the issues caused by social media regarding anti-vaccination and encourage closer monitoring of such content in order to battle hesitancy. The territory of interest for this research is European Union, as despite its unsullied prior record, the most recent data has been showing outbreaks of vaccine-preventable diseases due to insufficient vaccination coverage rates. (European Commission, 2016)*

Analyzing European vaccination data and patterns, EU-focused academic researches and literature and social media presence of the "anti-vax" campaigns, the work brings up the prospects and suggestions for the possible solutions to the problem.

Keywords: *Medical communication, Social media, Anti-vaccination.*

1. INTRODUCTION

Powerful claws of the Internet are reaching far and wide into our everyday life. It is also well-known that even the most crucial parts of it, such as the health sector, for example, are under the influence of the digital media, allowing to experience both good and bad sides of it. The latest tendency that has been spreading noticeably fast is the so-called "anti-vax", or anti-vaccination campaign, the point of which is to make more and more affectionate people to refuse the general practice of immunization. The situation got to the point when it strengthens another phenomenon called "vaccine hesitancy" – the overload of the information causing patients to be indecisive and suspicious about the vaccination and its benefits. Obviously, the movement did not start with the rise of the Internet, as there were always doubtful individuals expressing their concerns and influencing others to question vaccination practices. However, the actual danger developed with the wide access to social media platforms where anyone can freely communicate their views and ideas. As far as the Convention for the Protection of Human Rights and Fundamental Freedoms Article 10 Freedom of expression 1 (effective 3 Sep. 1953)[2] is concerned, the freedom of expression is a basic human right that allows people to hold opinions and ideas without intervention from the side of the authorities. This makes it even harder to control the spread of misinformation and misinterpretation regarding vaccination practices, making more people unsure of the rightfulness of their choices.

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[2] It is commonly known as the European Convention on Human Rights and is the first instrument to give effect to certain human rights and make them binding.

The importance of this topic at the time of writing is even more undeniable, considering the recent breakout of COVID-19 and the potential endangering of the population of the world due to the misinformation spreading throughout the Internet.

The population of the European Union is of special interest for this work, as it is known for a significantly rising number of vaccine hesitant people (Larson et al., 2018, p. 8).

2. EU ON THE NEEDLE

Qualitative research of this work can be divided into two groups: the analysis of different European countries based on the pre-existing research and analysis of the Hungarian social media platforms, conducted for this research.

Within the first group of the qualitative research, we can see that Italian YouTube studies show that clips that disapprove of the vaccination practice are more liked and shared, therefore attracting more attention. (Covolo et al., 2017), The analysis of the Italian Twitter scene proves that the anti-vaccination community online can be very influential due to their build-up and online prevalence. (Cossard et al., 2020)

Slovenian research concluded that the communicational and online activity of mothers grows proportionally to their concern level. Most often they seek information from their friend groups or on the Internet, which also proves the essentiality of proper professional communication both off- and online. (Vrdelja et al., 2018).

Video analysis focused on France has shown similar results, the difference between YouTube views of the French-language anti-vaccination clips happens to be almost 54% more than the ones promoting vaccination. (Lahouati et al., 2020).

3. COVID-19

It is important to mention that during the course of conducting this research the world has entered a global pandemic (this work has been finished in November 2020).

A study that concentrated on the willingness of the representatives from 7 different European countries has shown that almost 74% would agree on the COVID-19 vaccine upon availability, around 19% were not sure, and approximately 7% would refuse. Amongst the reasons for refusal, the majority referred to the vaccine's safety and the fast paste of its creation. (Neumann-Böhme et al., 2020)

4. CASE STUDY OF HUNGARIAN COVID-19-RELATED VACCINE HESITANCY

Local to the research scene (Hungary) had not been a stranger to the active discussions. In order to explore the researched topic, several social media platforms have been searched for the COVID-19 vaccination-related content.

Even though the study of Instagram and Twitter had shown a rather positive dynamic with either regulated content or simply the prevalence of the pro-vaccination, on gyakorikerdesek.hu

the effects of the negative influence of social media can be seen. "Vaccine" ("Oltás") appears to be one of the most popular topics of discussion at the moment of writing (autumn 2020). Several questions have been created regarding the COVID-19 vaccine, the two most recent of which have been analyzed for this research.

Whenever asked by peers to provide proof of their anti-vaccination statements, many refer to naturopathic articles, YouTube videos, blogs and refuted studies.

The majority of the respondents also would not like to vaccinate themselves against COVID-19. Amongst the reasons behind their decision, side-effects, mistrust towards the ingredients and "injectable nanorobots controlled by 5G" have been mentioned.

Figure 1. "If there is a vaccine against coronavirus, will you vaccinate yourself?" (translation).
Source: Anonym, gyakorikerdesek.hu, last access: 13 Oct. 2020

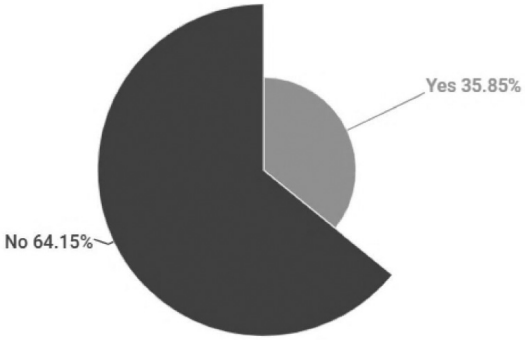

Figure 2. Results of the 1st question on gyakorikerdesek.hu
Source: Sidorina, E., 2020

5. RESEARCH

The main research of this work is a questioner-based review of participants' knowledge on the "anti" or "pro"- vaccination propaganda on social media, the effect this information has made on them, and the attitude towards the availability of such content. (The method of sampling is a non-probability voluntary response, the information had been received from the volunteer anonymous respondents via Google Form questionnaire, the condition for participation has been to be a resident or a citizen of one of the European Union countries. The time of data collection is October 2020)

RQ 1: How old are you?

RQ 2: What country are you currently living in?

RQ 3: If different from previous answer, which country were you born in?

RQ 4: If needed, will you be able to receive medical care in your current country of residency?

RQ 5: Do you use social media sites?

RQ 6: If yes, which media sites do you use the most?

RQ 7: Have you ever used social media sites to find any medical information?

RQ 8: Are you supporting vaccination practice?

RQ 9: Have you ever used social media sites to find any information related to vaccination?

After this question, the participants have been asked to elaborate on their answer. Depending on their reply, they are directed to one of the following sections: "If the answer is yes" or "If the answer is no".

First section includes:

RQ 10: Share your story!

RQ 11: How would you rate the usefulness of the information you have received? (on the scale of 1-5, 1 - not useful, 5 - very useful)

RQ 12: How would you rate the way this information affected your opinion on vaccination? (on the scale of 1-5, 1 - not at all, 5 - very much)

Second section consists of:

RQ 10: Please explain why

RQ 11: Would you ever use social media to find more information about vaccination?

In both cases, the respondents have been encouraged not to provide any private information in order to keep their anonymity.

RQ 12/13: In your opinion, can social media sites be considered a valid source of medical information, especially regarding vaccination?

Figure 3. Research questions for the main questionnaire
Source: Sidorina, E., 2020

Participants of the research are representing different age groups, the youngest being 13 years old and the oldest reported to be 66. The majority of the respondents happened to fall in 22-26 years old category. The most commonplace of the current residence turned out to be Hungary (45), which was followed by the United Kingdom (7) and the Netherlands (6).

Only one person out of all participants have answered negatively to the question regarding the ability to receive medical care in the country of residency, therefore one can make an assumption that almost all of the participants have access to vaccination. In the 5th research question, the respondents have been asked whether they use any type of social media sites, to which 92.4% gave a positive answer. This fact proves that the majority of respondents might be exposed to the influence of their peers via social media platforms. The most used social media of the participants are Facebook, Instagram, YouTube and Twitter. The next question showed that 58.2% of the people have never used social media platforms for finding any type of medical information. Another important question in this particular research is whether the respondents are supportive of the vaccination practice. 75% gave a positive answer to this question, 15.8% – negative and the remaining responses could be united by the "Depends" category. Only 18.4% of the research contributors have used social media plat-

forms to find any vaccination related information. The reasons for that were the core information on the vaccines' effects, peer recommendations, a vaccine against COVID-19, vaccination policies in European Union or the pop-up articles on social media. When asked to rate the usefulness of the information they have received on the scale of 1-5 (1 – not useful, 5 – very useful), the materials were mainly estimated to be rather useful (4 out of 5). The effect of this information on participants' opinion on vaccination have been rated 3 by the majority. The most common reason among those who do not use social media sites for the information on vaccination was the unreliability of the sources. Those participants stated that they would never use social media for finding materials on vaccination. The analysis of the final question showed that more than half of the people would not consider social media platforms to ever be a valid source for any sort of medical information, including materials on vaccination, 20.25% do consider it to be reliable and the remaining 15.19% of the responses can be categorized as "Depends". The reasons that have been brought up by this group included doubts regarding sites or people providing the information, the inability to prove the quality of data or the competency of the users, the possibility of being influenced by the social media due to the "bubble effect" (unconscious formation of views and opinions based on the people the user is following on social media) and the exclusive trust to the medical professionals.

The main research gave the opportunity to get a picture of the social media's effect on vaccination-related decision-making process and the awareness of the unreliability of many online sources. The results show that the majority of participants recognize the unreliability of the information on medical topics, including vaccination. Their critical thinking has allowed them to stay indifferent towards the propaganda and unprofessional opinions. People are more willing to turn to medical professionals and valid sources for information on the vaccination, which is definite proof of the upcoming changes in medical and social media literacy.

Additionally, medical experts have been interviewed on the potential solutions to the vaccination hesitancy issue have been collected and included in this research.

RQ 1: Which country are you currently living in?

RQ 2: If different from previous answer, which country were you born in?

RQ 3: What is your occupation? (please include your specialization)

RQ 4: Do you find social media platforms' effect on vaccine hesitant individuals to be rather positive or negative? Please explain why

RQ 5: What kind of solutions could you suggest for fighting vaccine hesitancy?

Figure 4. Interview questions for medical professionals
Source: Sidorina, E., 2020

Three medical professionals, residents of Germany, France and Hungary have agreed to participate in the interview. For all except one the country of residency also happened to be the country of origin. The occupations of the respondents are the following: Head of Emergency Department; Physician specialized in internal medicine and emergency medicine; Consultant in mental wellbeing and Dermatologist. All of the respondents find social media platforms' effect on vaccine hesitant individuals to be negative. The reasons for the opinion is common as well, which is the prevalent misinformation and propaganda on social media. One of the respondents also mentioned the "defense of the truth" regarding the vaccination, which is lacking on social media. According to the participant, the action of debating on rightfulness is often a great consumption of one's time and energy.

Suggested solutions include more active engagement of the medical professionals on social media sites, especially Facebook and Twitter, actively putting effort into fact-checking and clearly communicating information regarding vaccination, with its pros and cons.

Several possibilities for future research have been considered during the course of this study. Firstly, potential research can be done on the long-term effect of the moderated social media consumption on people. Secondly, research involving volunteer medical professionals from the European Union who would agree to make educational and entertaining content on the topic of vaccination for a set target audience has been considered. Both of the research ideas would provide very useful insides into the interconnection between vaccine hesitancy and social media, allow a deeper, more practical study of medical communication online and serve as an example of the application of the potential solutions to the real-life medical and digital media practice.

6. STUDY LIMITATIONS

During the course of the research, certain limitations have been faced, such as the majority of data collected having a stronger regional (Hungarian) focus due to the main location and participants of the research and the limited amount of collected data due to time limitations of this study. The research is also focused primarily on a younger population, as this particular segment happened to be easier to access.

7. CONCLUSION

Anti-vaccination-related content on social media is often preferred by the algorithms and more noticeable among the rest of the materials due to its activity levels and the enthusiastic, tightly-connected supporters. COVID-19 appeared to be a significant addition to the pre-existing vaccination confidence issues.

Using the power of social media to educate and actively discuss the worrying issues can be a key to a greater digital footprint and a healthier world.

This proves the need for clear medical communication on the social media platforms in order to better assist the needs of the vaccine hesitant individuals of the European Union, as well as in other places.

REFERENCES

Academic Sources:

Cossard, Alessandro, et al. (14, May 2020) "Falling into the Echo Chamber: The Italian Vaccination Debate on Twitter." Proceedings of the International AAAI Conference on Web and Social Media, vol., pp. 130–40. Accessed 20 Sept. 2020

Covolo, Loredana, et al. (March 2017) "What Arguments on Vaccinations Run through YouTube Videos in Italy? A Content Analysis." Human Vaccines & Immunotherapeutics, vol. 13, no. 7, pp. 1693–99. PubMed, doi:10.1080/21645515.2017.1306159. Accessed 25 Aug. 2020

Lahouati, Marin, et al. (Aug. 2020) "Spread of Vaccine Hesitancy in France: What about YouTubeTM?" Vaccine, vol. 38, no. 36, pp. 5779–82. DOI.org (Crossref), doi:10.1016/j.vaccine.2020.07.002. Accessed 10 Sept. 2020

Larson, Heidi, Prof., et al. (2018) "State of Vaccine Confidence in the EU 2018." Publications Office of the European Union. DOI.org (CSL JSON), https://data.europa.eu/doi/10.2875/241099 Accessed 24 Apr. 2020

Neumann-Böhme, Sebastian, et al. (Sept. 2020) "Once We Have It, Will We Use It? A European Survey on Willingness to Be Vaccinated against COVID-19." The European Journal of Health Economics, vol. 21, no. 7, pp. 977–82. DOI.org (Crossref), doi:10.1007/s10198-020-01208-6. Accessed: 10 Oct. 2020

The Convention for the Protection of Human Rights and Fundamental Freedoms Article 10 Freedom of expression 1 effective 3 Sept. 1953. Accessed March 2020

Vrdelja, Mitja, et al. (Jan. 2018) "The Growing Vaccine Hesitancy: Exploring the Influence of the Internet." European Journal of Public Health, vol. 28, no. 5, pp. 934–39. PubMed, doi:10.1093/eurpub/cky114. Accessed 3 Sept. 2020

Other Sources:

Anonymous, (8 Sept. 2020), „Ha lesz oltás koronavírusra, te be fogod oltatni magad?", gyakorikerdesek.hu,https://www.gyakorikerdesek.hu/egeszseg__immunrendszer-fertozesek__10688764-ha-lesz-oltas-koronavirusra-te-be-fogod-oltatni-magad Accessed 13 Oct. 2020

Anonymous, (29 Sept. 2020), „Ha lesz covid19 vakcina, be fogjátok oltatni magatokat?", gyakorikerdesek.hu,https://www.gyakorikerdesek.hu/emberek__emberi-tulajdonsagok__10721069-ha-lesz-covid19-vakcina-be-fogjatok-oltatni-magatokat Accessed 13 Oct. 2020

Anonymous, (25 Nov. 2016). "Overview." Public Health – European Commission, 25 Nov. 2016, https://ec.europa.eu/health/vaccination/overview_en. Accessed 24 Apr. 2020