Chapter 3 Social Media and Health Communication: Vaccine Refusal/Hesitancy

Asuman Kaya

https://orcid.org/0000-0003-3074-0643

Eskişehir Technical University, Turkey

Ozan Bilge Mantar

https://orcid.org/0000-0002-8483-1658 *University of Strathclyde, UK*

ABSTRACT

The content presented in the media, especially with the element of fear, appears to be the most important factor in the formation and spreading of phobias related to diseases. Especially when it comes to epidemics, the influence of the media increases remarkably. Individuals now use digital media as the initial reference source, especially on issues related to their health, and tend to see social media as a reference platform. However, uncontrolled information, conspiracy theories, and information pollution spread through social media make the subject difficult to understand; online shared manipulative news, excessive and unfounded information cause fear and panic. These posts about vaccines affect the perception and attitude towards vaccines. In this study, the comments and social media posts will be analysed using content analysis and discourse analysis methods in order to reveal the effect of social media in vaccine rejection and hesitation.

INTRODUCTION

Throughout history, epidemics such as plague, cholera, and flu have deeply affected society. We are experiencing the latest example of this one-on-one with the COVID-19 outbreak. One of the ways to prevent epidemic diseases, which have become a social problem, rather than being an individual one which has an effect from economy to politics, is improving the immune system of individuals. Immu-

DOI: 10.4018/978-1-7998-6825-5.ch003

nization, which means removing or reducing the susceptibility of the individuals to diseases in the long term while preventing the emergence of diseases in the short term, can be acquired either naturally by exposure to the pathogen or later through vaccination.

Especially in recent years, although it is known that it causes epidemics and mass deaths and there are media warnings, the rate of those who take an anti-vaccine attitude is increasing. This ratio includes not only those who directly refuse the vaccine but also those who are hesitant about the vaccine.

Social media, which is the most referenced source for information on any subject; is among the primary sources that individuals refer to in matters related to their own and their children's health. In this sense, the anti-vaccine posts and comments on social media were examined and their discourses were evaluated.

BACKGROUND

The "right to health", which is an individual and social right, is among the second-generation human rights and regulates the responsibilities of the state towards the individual in the field of health services. The right to health, which is included in Article 12 of the United Nations Covenant on Economic, Social and Cultural Rights, with the expression "the enjoyment of the highest attainable standard of physical and mental health", is defined to the individual, but the state is stipulated as a practitioner and it is expected to create the best conditions of access of the individual to the appropriate healthcare. It is thought that the use of the right to health given to the individuals occurs when they are sick. Although this idea was initially valid; today, the meaning attributed to the concepts of illness and health has changed and the individual has started to benefit from the right to health in terms of lifestyle. With this conceptual transformation in the field of health, especially starting from the end of the 19th century, the focus has been on society, and the way to reach social health is pointed out as information gathering and control of the body (Kaya, 2016, p. 96).

Health communication, which can be defined as the work of informing, guiding, persuading individuals, communities, or wider groups of people about health-related issues, also includes the analysis of health policies, as well as activities to prevent or raise awareness of epidemics. Its general purpose is to increase the quality of life of people and society. In other words, the main goal of health communication aims to improve the overall healthiness level of society. Significant gains are achieved by using social marketing, advocacy in the media, public relations, and promotion methods in the context of improving health and spreading across the country. At this stage, health communication is one of the most basic systems that play a role in providing an effective and efficient information flow to institutions and organizations that provide health services during public education campaigns. The field of health communication examines how all elements of the communication process come together on health-related issues (Becerikli, 2013, p. 26; Hoşgör, 2014, p. 51-52).

Yüksel (2015, p. 251-252) described health communication as the type of communication needed in the field of health and stated that it has five dimensions according to the usage types: (1) *Internal communication* that motivates and motivates people. (2) *Interpersonal communication*, which refers to the communication between people who provide and receive healthcare-related services such as doctor, patient, and patient relatives. (3) *Group/team communication* between healthcare professionals, patients, and inter-patient solidarity groups. (4) *Corporate communication* in health institutions, from the manager to the employees and the target audience of the institution or from the suppliers of the institution to its competitors/other institutions. (5) *Social communication* through communication campaigns, public

relations activities, and mass media, together with health-related social services and practices. At the same time, Yüksel (2015, p. 252) explains the activities carried out within the framework of activities to change the unhealthy behaviours of the public, develop healthier behaviours, protect and improve health, and raise awareness against individual and social health risks within the scope of public health and social communication.

Whether health communication takes place through interpersonal or group communication or social communication, social media affects the nature and form of this communication. Individuals (sick or healthy) and healthcare professionals use social media to get information and communicate about health problems. For example, in the United States, 61% of adults search online and 39% use social media such as Facebook to get health information. Studies conducted in the UK indicate that Facebook is the fourth most popular source of health information (cited in Moorhead et al, 2013). Being an important tool in accessing health-related information, being able to transmit health messages on social media in a right way and to be understood as "accurate and proper" by the reader will cause the health behaviour to be correctly developed (Park et al., 2013). Therefore, health communication should not be considered separately from the health literacy.

Health Communication, Vaccines, and Media

One of the issues that should be addressed within the framework of health communication is the immunization activities carried out. Immunization refers to removing or reducing the susceptibility of an individual to diseases to prevent the emergence of diseases in the short term and to eliminate infectious diseases in the long term (Altınkaynak, n.d.). Immunization contributes to the protection of the health of the person, the improvement of public health, and the health economy of the country. Immunization can be achieved naturally, either through illness or through the mother-to-baby, or it can be acquired later through vaccination (Palancı, n.d.). Vaccination is the most effective method in terms of cost and reliability in protecting the health of both children and adults, preventing infectious diseases, and providing immunity at the community level (Gülcü & Arslan, 2018, p. 34).

The best example of vaccination and immunization is smallpox. In 1966, there were about 15 million smallpox patients in more than 50 countries, and the number of people dying from the disease varied from 1.5 million to 2 million per year. As a result of the vaccination campaign against smallpox initiated by the World Health Organization (WHO) in 1966, it was announced that smallpox was eradicated on May 8, 1980, and there were no new cases in the world. According to the calculation published by UNICEF in 1996, if the smallpox vaccine had not been found, approximately 5 million people in the world would have died from this disease by that date (Aytaç & Aker, 2014). Today, smallpox, which caused the death or disability of millions of people in the past, has been erased from the world with vaccination methods, and polio has decreased to the level of eradication. The spread of diseases such as measles, mumps, rubella, whooping cough, diphtheria, infectious jaundice (hepatitis) has been largely prevented in many countries (Akova et al., 2015).

Although immunization studies through vaccination continue, diseases that are controlled by vaccination for different reasons (geographical, political, etc.) are emerging again. Among the 10 global health problems that the World Health Organization plans to resolve in 2019, "anti-vaccination" ranked as first (Gür, 2019). Anti-vaccination is defined as a pattern of behaviour ranging from being against a single vaccine to rejecting all vaccines (Kader, 2019, p. 386).

Even though it is known that it causes epidemics and mass deaths and there are many warnings regarding the issue, the number and ratio of those who refuse to vaccinate (anti-vaccines) are undeniable. The reasons for anti-vaccination are classified as those who consider the profit is less than loss, those who do not feel the need because they think they are not at risk, and those who object on religious, philosophical or, conspiracy grounds. At the same time, studies are stating that the issue of insecurity stands out among the reasons for developing anti-vaccine behaviour. (Aytaç & Aker, 2014; Aslan, 2018).

The initiation of the vaccine rejection movement is in parallel with the mandatory vaccination policies, and the issue has increased as a result of the increase in the number of printed materials in the second half of the 19th century. The process of vaccine rejection can be summarized as follows: Between 1950 and 1960, universal vaccination programs were initiated against polio, mumps, measles, rubella, and although there is still opposition to the vaccine, vaccines were widely accepted between these years. These years have been accepted as the golden age of vaccine acceptance. With a study published in the UK in 1974, the discussions on vaccination flared up again. With the publication of this research on television and newspapers, the issue has attracted more attention and the number of families who are against vaccination has started to increase. While there was a media boom about the vaccine in the late 1990s, families continued to be affected by negative media reports. In 1998, Andrew Wakefield's research in the UK in which he claimed a relationship between autism and measles-rubella-mumps (MMR) vaccine was published in The Lancet journal. This article was retracted by the Lancet due to a skew of the results in 2010 (Çapanoğlu, 2018). Media reports about the existence of a relationship between vaccines and autism caused health fears to a large extent, families' trust in vaccination and vaccination was displaced, and they caused them to avoid vaccination behaviour. As a result, there was an increase in death cases due to measles in England and Wales between 1998-2008 (National Health Service in England, 2012).

Individuals' attitudes towards vaccination and vaccination are shaped by different sources of information, including social media. (Yaqub, Castle-Clarke, Sevdalis & Chataway, 2014). The uncontrolled spread of both the news in the traditional media and the posts made consciously or unconsciously on social media is an important factor in shaping health and behaviour. In this sense, it is also used effectively by anti-vaxxers and may cause the development of negative behaviours related to vaccination (Royal Society for Public Health, 2019, p. 3; Kata, 2010, p. 1710). The fact that famous names announced that they were against vaccination to large masses through the media caused this idea to spread. With the widespread use of the Internet, anti-vaccine groups and blogs started to emerge in social media applications. The number of these groups has increased, reaching thousands of followers all over the world, including Turkey.

The most comprehensive study on vaccine rejection is a Medical Specialty Thesis named *Thoughts* and Beliefs of Anti-Vaccination Parents in Turkey: A Qualitative Study, by Salih Aslan. In the thesis, to determine the reasons for vaccination rejection, face-to-face interviews were conducted with 21 families who agreed to meet via social media. In the findings of the study, the reasons for vaccine rejection were examined and explained under the headings of mistrust/doubt, effectiveness-importance of vaccines, decision-making process-bases/grounds, law and, ethics. In the study, the parents decided not to vaccinate their next child as a result of their research; while initially unaware of the discussion topics about vaccines, it is stated that they are partially or completely against vaccines as a result of the posts on the internet and especially on social media. It is also stated in the study that social circles, internet, newspaper and TV news, domestic and foreign websites followed, social media groups and the posts made in these groups play an important role in the formation of negative thoughts about vaccines (Aslan, 2018, p. 44, p. 46). In the study, which stated that mistrust stands out among the most important reasons

for vaccine refusal. Aslan (2018) says "When we examine the findings we obtained in our study and the hesitations about the vaccines stated in the messages shared by the parents in various social media groups, [mistrust] appears to be the most important reason alone in our country for vaccine rejection and parents' hesitation about vaccines.".

The prevention of vaccine rejection, which WHO includes among ten global problems, should be seen as a social responsibility. In this sense, a wide spectrum, from healthcare personnel to media professionals and even politicians, should be considered within the solutions should be sought. Similarly, another study that states that the issue of vaccine rejection/hesitancy should be resolved by requiring a social science perspective and multi-disciplinary approaches, belongs to Özata & Kapusuz (2019). Similarly, a value study that states that the issue of vaccine rejection/hesitancy should be resolved by requiring a social science perspective and multi-disciplinary approaches, belongs to Özata & Kapusuz (2019). In this sense, the study emphasizes that different perspectives, especially social marketing, can contribute significantly to the subject, and it is stated that vaccine hesitancy should be focused primarily on. It is stated that in order to apply the right strategies to families in the fight against anti-vaccination, it is necessary to conduct a segmentation study with a social marketing perspective.

Another study that should be emphasized is the master's degree thesis titled *Parental Opinions on Childhood Vaccination Refusal in Konya Province and Factors Affecting Vaccination (original: Konya İlinde Çocukluk Çağı Aşı Reddi Konusunda Anne-Baba Görüşleri ve Aşılamayı Etkileyen Faktörler)*, which was prepared by İlter (2020) to determine the opinions, knowledge and attitudes of parents who refuse vaccination. Within the scope of the study, between January 1 and December 31, 2017, families who were registered with GPs in Konya who refused vaccination or were not vaccinated for various reasons and who were able to participate in the study voluntarily were interviewed. 590 people (478 mothers and 112 fathers) were interviewed in total, İlter (2020) stated that main sources of information as follow: 70% of the parents who refused to vaccinate their babies were received information from GPs, 65.4% from internet/social media, 38.8% from religious sources, 38.5% from family or friend, 32.0% from the paediatrician, 32.0% from anti-vaccine groups and 31.9% from religious opinion leaders.

Stating that international-sourced disinformation and misinformation on social media cause an increase in the belief that vaccines are unsafe for those who have hesitations about vaccines, Wilson & Wiysonge (2020) point out that the fight against disinformation in social media is a critical point to reverse the growth in vaccine hesitation worldwide.

Stating that as a result of disinformation and misinformation, there were also failures in the polio vaccination program in Pakistan, Khan et al (2020) states that a similar situation is on the agenda for the COVID-19 vaccine. It was also underlined that the media should behave more carefully in order not to develop negative behaviour against the vaccine, and that misleading claims should not be included.

Puri, Coomes, Haghbayan & Gunaratne (2020) stated that anti-vaccine messages can spread globally as social media allows for content creation and sharing without editorial oversight, unlike traditional media, also point out that health literacy depending on concrete evidence should be encouraged to combat with anti-vaccination and pandemics such as COVID-19.

Today, when the internet and social media constitute a large part of the life of the individual, the individuals tend to see social media as a reference platform rather than the people around them (Altan, 2014). In this sense, it is an undeniable fact that they consult the opinions on social media regarding an issue related to their children's health.

MAIN FOCUS OF THE CHAPTER

In this section, the aim and method of the study are given, and the obtained findings are explained.

Issues, Controversies, Problems

Answers to the following questions were sought in this study, which aims to examine social media posts in order to reveal the effect of social media on vaccine rejection:

- How is the distribution of social media posts?
- What kind of posts have the most comments and likes?
- How is the discourse shaped in these statements?

Two main trends draw attention in studies on news texts in the science of communication. The first of these is the positivist trend that focuses on the apparent (manifest) meaning by using content analysis; The second is the critical trend that treats the news as discourse (İnal, 1996, p. 27). Berelson, who first systematized content analysis and published his book in 1952, defined it as "a research technique that makes objective, systematic and quantitative definitions of the apparent content of communication" (Gökçe, 2006, p. 35). Today, according to the definition of Merten, which is stated to be the most comprehensive definition of content analysis, content analysis is expressed as "a method that investigates the social reality by making inferences about the unclear features of the content from the clear contents of social reality (as cited in Gökçe, 2006, p. 18)". The steps to be followed in the application of content analysis are listed as content provision, preparation of codebook, analysis, and interpretation. Discourse analysis, which is based on discourse, and based on the examination of daily expressions, sentences, and texts in the context of being spoken, is an analysis method that tries to understand the opinion of the author of the text rather than the visible side of the text and focuses on symbols, traditions, norms and figures outside the text¹. Context and meaning relationship is important for discourse analysis. In this sense, the discourse analysis method deals with the questions about the discourse produced in a certain context is directed to whom, what it says, what effect it has, and what kind of meaning it produces (Celik & Eksi, 2008, p. 105; Sancar, 2008, p. 106 as cited in Keskin, 2015, p. 9; Yanık, n.d.). The method of analysis that focuses on social problems engrosses on revealing the discursive character of power relations, sees discourse as a historical, and ideological process, and tries to establish the relationship between text and society in an interpretative and explanatory framework based on this, is called critical discourse analysis. In this context, content analysis and discourse analysis methods were used together in the study.

According to the Internet and social media statistics, Digital 2019 Report by We are social and Hootsuit, 56% of the world population with 4.38 billion users use the Internet and 45% of the world population with 3.48 billion users use social media. In the same report, the chapter about Turkey states that 72% of the population (59.36 million) and 63% of internet users (52 million) are active users of social media. The most popular and active social media platforms are YouTube, Instagram, Facebook, Twitter, Snapchat, and LinkedIn according to the beforementioned report (Bayrak, 2019, February 1; Bayrak, 2019, February 6).

In this sense, due to its long-term use of social media and being active, a non-profit organization called -AYMD- *Aşı Yaptırmaya Mecbur Değilim Hareketi* ([movement of] I Don't Have to be Vaccinated, and will be referred to as *AYMD* from now on) constitutes a representative "anti-vaccine" sample of the

study by its Facebook page and posts. The Facebook page of AYMD, which was established in 2010, includes the following information, and also saying "If someone comes to your door and forces you to vaccinate your child and threatens to file a lawsuit, send us an e-mail":

You search, I make the decision. No person can be obliged to apply a treatment method that he does not prefer. AYMD supports the right of people who do not find vaccines safe due to the risks that may arise, not to have them vaccinated by themselves and those under their responsibility, and therefore raise awareness about their legal rights that will prevent them from being subjected to pressure by health institutions (Aşı Yaptırmaya Mecbur Değilim hakkında, n.d.).

The posts examined in the study were recorded and analysed with QSR NVivoTM 12 and its extension NCaptureTM software. A total of 520 posts and 5077 comments between December 2010 and March 2019 were reached and analysed using the content analysis method. Among the posts, the 3 posts "with the most comments" and "the most liked" and their comments were analysed using discourse analysis.

When the posts on the social media page of the AYMD movement, which is the subject of the study, are examined, it is seen that most of the posts are made by AYMD, not by the users. These posts include news, interviews, sections from television programs, statistical information, and articles in foreign languages. At the same time, it is possible to say that stock images of babies, children, vaccines, and measles are used frequently, and the language used is scary rather than cautionary.

The posts and comments were mostly made in 2016 (f = 175) and 2015 (f = 89). Similarly, most of the comments were made in 2016 (f = 2179) and 2015 (f = 1047). When the distribution of the number of posts and comments made by the AYMD movement since December 2010 is examined, it is possible to say that they are (mostly) parallel. However, the year 2018 is out of this trend with the number of posts and comments made.

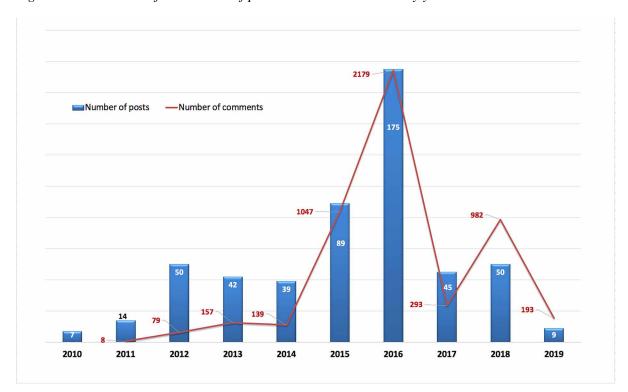


Figure 1. Distribution of the number of posts and comments made by years

When the sources of the links given about the information in the shares are examined, it's seen that they consist of internet pages of printed newspapers (f = 12), internet pages of television channels (f = 4), internet news portals (f = 4), health news portals (f = 4), news agencies (f = 2), associations (f = 2) etc. A total of 69 different sources were used. The distribution of the most used sources among these sources is as follows: ahmetrasimkucukusta.com (f = 16), an anti-vaccination website lilliputian.me (f = 8), yenisöz.com.tr (f = 8), youtube.com (f = 8) and medimagazin.com.tr (f = 5).

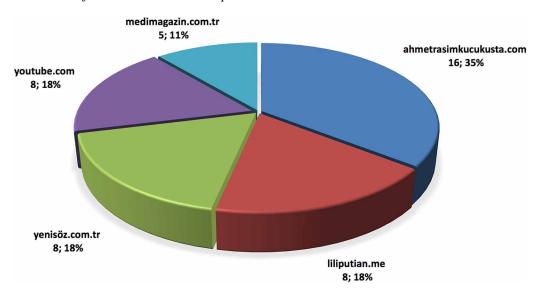


Figure 2. Sources of the most used links in posts

When the shares are examined; The most commented (f = 352) and liked (f = 770) post was shared by Ukrainian physician Dr. Aidin Salih. There is also a post with the photo of her along with the stated article she wrote. In the post, it is stated that the article was written to raise awareness of the public about the vaccine campaign after the "so-called" Swine Flu epidemic in 2009, with the phrase "About mandatory and pressured vaccines".

AYMD / I Don't Have to be Vaccinated

25 September 2016

The article written by deceased Doctor Aidin Salih to raise awareness of the public about the vaccination campaign, which is planned to be launched in 2009 under the pretext of the so-called swine flu outbreak.

THE FACTS ABOUT VACCINES

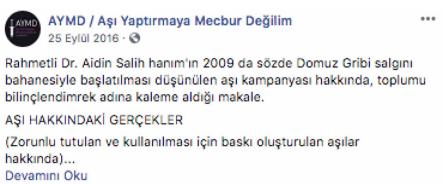
(About mandatory and pressured vaccines)

The topics included in the article are as follows: The swine flu vaccine is in trial phase, all vaccines, including influenza vaccine, are harmful, vaccines have side effects and these can be realized after 15-20 years, the swine flu vaccine contains a wide range of substances from aluminium to swine tissue, from chick embryo to human foetus, from human sperm to canine kidney, with the DNAs used in the vaccine,

Social Media and Health Communication

people will become chicken, cattle animal, rabbit, monkey or pig, verses in the Quran, statements by Rasim Küçükusta (another medical professional). The ailments caused by vaccines are also included in the text. These are infertility, polio, autism, muscle-bone and connective tissue diseases, nervous system diseases, Guillain-Barré syndrome, AIDS, skin blisters, brain membrane inflammation, blood structure deterioration, nerve inflammation, concentration problems in children, learning difficulties, speech disorder, seizure, epilepsy, hyperactivity, continuous and loud crying, severe allergy, sudden drop in blood pressure, fever, referral, arthritis, muscle aches, skin rash, enlarged lymph nodes, chronic fatigue, chronic headaches, loss of whole body hair, non-healing wounds, memory loss, epileptic seizures, paralysis, anaemia, mental problems, shortness of breath, chronic diarrhoea and night sweats.

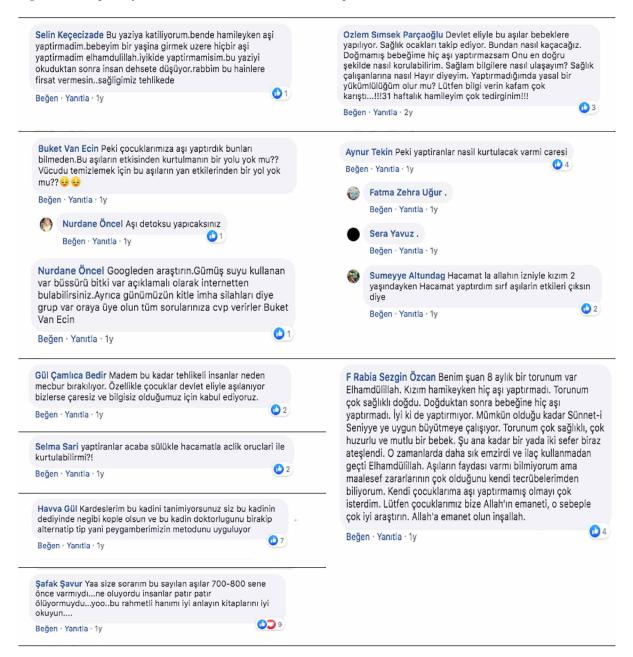
Figure 3. The 1st most commented and liked post





41

Figure 4. Samples of the 1st most commented and liked post



When the shared text is examined, although it is claimed that it belongs to Dr. Aidin Salih, it is seen that there is no evidence to prove this. When the content of the text is examined, it started with the swine flu vaccine and continued with the topic that the vaccine is harmful in general, and verses from the Quran were also included. At the same time, there are opinions expressed as the views of Rasim Küçükusta (another medical professional) in the text.

Social Media and Health Communication

In the comments, this confusion is seen in the text, but when the comments are examined, it is seen that the people who are already undecided are afraid of the diseases listed in the text of the article and reinforce the decision not to vaccinate and question what they should do to eliminate the effect of the vaccines. For this, "vaccine detox", cupping "etc. methods appear to be recommended. At the same time, it is seen that the comments take place in his religious discourses. In this sense, it is possible to say that they reinforce the anti-vaccination with religious references.

In the second post examined, a document with the title "According to the Disease Control and Prevention Center (CDC) data, the contents of the vaccines and the side effect table ..." was shared. It is understood shared document was prepared by the AYMD Movement by the logo used. Besides, although it was stated that the statement made in the share was prepared by the aforementioned institution, CDC, "Below is the list of vaccine content compiled from the vaccine content list published by the CDC and the list showing the side effects of the vaccine manufacturer in its own publications (prospectuses)." warning/information is included at the beginning of the document.

AYMD / I Don't Have to be Vaccinated

17 June 2015

Contents of vaccines and side effects table according to the CDC data of the Center for Disease Control and Prevention

WHAT IS IN VACCINES?

The table contains information on 11 different vaccines, such as DTaP, influenza, varicella, and MMR vaccines. In addition, in the document, some words were written in bold in order to draw attention to both the ingredients and the side effects, but the reason for this was not explained. In the last part of the same document, there is a note "* Please see Annex 1 for the full list of the American CDC organization showing the adjuvants other than the preservatives used in vaccines and the acculturation media in which they are produced", however, it is not included in the specified additional list and it is not shared as a link to access the document.

When the comments made on the document prepared by the AYMD movement containing confusion are examined, it is seen that there are questions about the reliability of the posted data as well as polarization and heavy accusations among the commenting users. It is possible to observe the confusion within these posts. Unlike the comments made to the first post, it is seen that the comments made in this post have an aggressive and offensive approach towards doctors. In addition, emphasizing that it belongs to the American CDC in the shared document, this perception created another perception that a "scientific document" or "credible statistical information" was shared, which was reflected in the post and comments.

AYMD / I Don't Have to be Vaccinated

30 March 2018

Why are the damages of vaccines not explained, what kind of a bias is this? And how can someone who has no official duty find the right to speak like that on behalf of an institution just because he or she is being asked an opinion? Why does the ministry of health not prevent someone from making a statement on their behalf?

Ministry of Health Warns!

The epidemic could explode

Great danger in vaccine refusal: Epidemic may outbreak.

Figure 5. The 2nd most commented and liked post



In the third post examined, some news was shared by the AYMD movement. The news on the website of a newspaper named Sabah, "The Ministry of Health Warns! The epidemic could boom" and the link containing the news was also shared. The following statements were made by AYMD in the post: "Why can't the harms of vaccines be explained, what kind of bias is this? And how can someone who has no official duty find the right to speak on behalf of an institution just because he is asking for an opinion? Why doesn't the ministry of health prevent someone from making a statement on their behalf?"

Social Media and Health Communication

Figure 6. Samples of the 2nd most commented and liked post

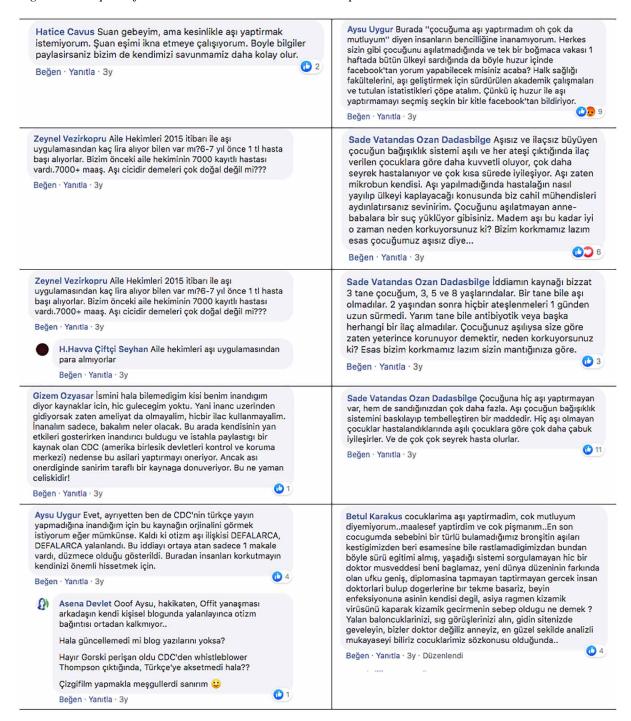


Figure 7. The 3rd most commented and liked post



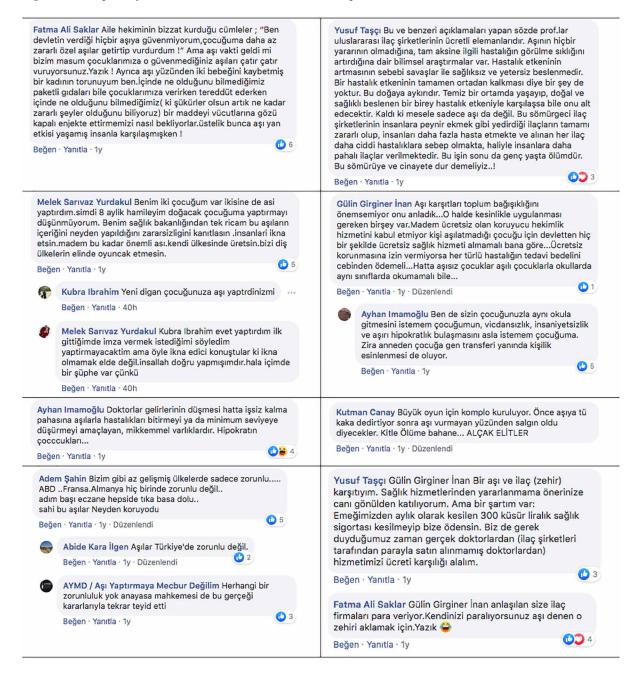
Aşıların zararları neden anlatılamıyor, bu nasıl bir yanlılık? Ve Resmi hiçbir görevi olmayan biri, sırf kendisinden fikir soruyor diye bir kurum adına böyle konuşma hakkını nasıl bulabilir? Neden sağlık bakanlığı birilerinin kendi adına beyanat vermesine engel olmuyor?



In the introduction of the posted news, it was stated that Mehmet Ceyhan who is a member of the Ministry of Health Immunization Advisory Board, stated that the vaccine refusal increased to 23%. Following Ceyhan, the words of "The consequences of this are getting worse. Measles has also started to appear in children who have been vaccinated. We have not encountered such a picture in about 15 years. Vaccine denial finds 50 thousand outbreaks can occur in Turkey" has been transferred as a warning. In the news text, it is stated that the increase in the number of measles cases seen in 2017 and 2018 is dangerous, and it is underlined that the need to raise awareness about vaccination and the need to be careful in anti-vaccine discourses.

Considering that the person who is the source of the aforementioned news is a member of the Ministry of Health Immunization Advisory Board, AYMD's "Someone who has no official duty", "Why does the Ministry of Health not prevent someone from making a statement on his behalf?" statements bring along the idea that the credibility of this movement must be questioned. It is also possible to say that this aggressive attitude is reflected in the comments. This situation is clearly seen in comments such as "the so-called professors who make these statements are employees of international pharmaceutical companies ...", "... vile elites", "doctors bought by pharmaceutical companies ...".

Figure 8. Samples of the 3rd most commented and liked post



SOLUTIONS AND RECOMMENDATIONS

In the posts of AYMD, it is seen that their discourse is shaped by reference to religious and foreign sources and that the language used in the discourses includes anger and hatred. Many terms related to vaccines causing different diseases or the active ingredients in vaccines have been used with spelling errors. Again, in the posts, different people are shown as references, but there is no information about the confirmation of information.

It is thought that all of these posts will not only support the opinions of those who are already against the vaccine, but also cause hesitant people to develop negative behaviours against the vaccine. It is seen that the news is given as a reference in the posts. The importance of the language and discourse used by journalists in this news production process becomes clear once again.

FUTURE RESEARCH

The use of mass media and social media in informing and raising the awareness of the society about the results of scientific studies on vaccination and its effects will ensure rapid progress in the fight against vaccination.

In the fight against vaccination, it is essential that scientists should carry out scientific studies on the reasons for vaccine hesitancy-vaccine rejection, methods to increase social approval in vaccination and offer solutions in the light of these researches. Studies show that it is one of the most effective ways for physicians and healthcare professionals to establish good communication and trust with the individuals and parents to be vaccinated, to eliminate hesitations about vaccination. In addition, the use of mass media and social media in informing and raising the awareness of the society about the results of scientific studies on vaccines and their effects will provide rapid progress in the fight against "anti-vaccination".

At the same time, how health content in the media is presented is an important point. Revealing how the discourse, language and style of content or news affect people who are hesitant about vaccination/immunization will contribute to the fight against anti-vaccination.

Health literacy, which is considered as an important concept in patient education and disease management, is seen as an issue that should be considered not only in a wide scope such as health policies and healthcare costs, but also because of its potential to affect the health of the individual. For this reason, according to Gözlü (2020), health literacy should be shaped by multi-stakeholder participation consisting of society and faith-based organizations, health institutions, academia and business communities, official institutions, educators, health communicators and the media. With this aspect, working on health literacy and vaccination, especially on social media, will contribute to the fight against anti-vaccination by raising public awareness about vaccination.

CONCLUSION

Especially in recent years, although media warnings have been given and although it is known that it causes epidemics and mass deaths, the rate of families who adopt an anti-vaccine attitude is gradually increasing. Those who refuse vaccination for different reasons affect the hesitancy and refusal of vaccines in others.

In the study, which aimed to examine social media posts in order to reveal the effect of social media on vaccination rejection, as stated in the literature review, "thought to be at risk", "conspiracy-based reasons", "religious discourses", "forced by the state" expressions come out.

However, what is remarkable is that, despite the study of Wakefield that autism and MMR vaccine are related and predicts that vaccine rejection takes place on this axis, it is seen that the relationship between the measles vaccine and autism is not emphasized on social media.

It is observed that users who are hesitant to display the behaviour of vaccine refusal are guided by panic and fear as well as religious discourses, and even more, they head to aggressive and offensive discourses that shake the base trust to public institutions and public professionals/workers. It is also necessary to question how reliable the referenced sources are. Although the fact that all the posts are based on the news in newspapers is not taken into consideration by the users/posters, it is once again revealed that in the name of health journalism, it is necessary to be careful when reporting on the subject and to consider the effect it will create.

ACKNOWLEDGMENT

This research received no specific grant from any funding agency in the public, commercial, or not-for-profit sectors.

REFERENCES

Akova, M. (2015). *Bilim akademisinin aşılama ile ilgili görüşü*. https://bilimakademisi.org/wpcontent/uploads/2015/07/BilimAkademisiAsiDuyurusu2015.pdf

Altan, A. (2014). *Sosyal Medya, Tüketicilerin Satın Alma Alışkanlıklarını Nasıl Etkiliyor?* https://www.ademaltan.com.tr/sosyal-medya-tuketicilerin-satin-alma-aliskanlıklarimizi-nasil-etkiliyor/

Altınkaynak, S. (n.d.). *Bağışıklık ve bağışıklama*. https://content.lms.sabis.sakarya.edu.tr/Uploads/6831 2/50734/%C3%A7ocukluk_%C3A7a%C4%9F%C4%B1_a%C5%9F%C4%B1lar%C4%B1_1.pdf

Aşı Yaptırmaya Mecbur Değilim hakkında. (n.d.). https://www.facebook.com/pg/aymd.org/about/?ref=page_internal

Aslan, S. (2018). Türkiye'de aşılara karşı çıkan ebeveynlerin aşılar hakkındaki düşünceleri ve inanışları: Kalitatif çalışma. Uzmanlık tezi. T.C. Ankara Numune Eğitim ve Araştırma Hastanesi, Aile Hekimliği AD.

Ataç, Ö., & Aker, A. A. (2014, Spring). Aşı karşıtlığı. Sağlık Düşüncesi ve Tıp Kültürü Platformu Dergisi, 30, 42–47.

Bayrak, H. (2019, February 1). 2019 İnternet Kullanımı ve Sosyal Medya İstatistikleri. https://dijilopedi.com/2019-internet-kullanimi-ve-sosyal-medya-istatistikleri/

Bayrak, H. (2019, February 6). 2019 Türkiye İnternet Kullanım ve Sosyal Medya İstatistikleri. https://dijilopedi.com/2019-turkiye-internet-kullanim-ve-sosyal-medya-istatistikleri/

Becerikli, S. Y. (2013). Türkiye'de sağlık iletişimi üzerine yazılan lisansüstü tezlerin bibliyometrik analizi: Eleştirel bir bakış. *Ankara Sağlık Hizmetleri Dergisi*, 12(2), 25–36.

Çapanoğlu, E. (2018). Sağlık Çalışanı ve Ebeveyn Perspektifinden Çocukluk Çağı Aşılarının Reddi Niteliksel Bir Araştırma (Master's Thesis). Acıbadem Üniversitesi Sağlık Bilimleri Enstitüsü.

Düzgün, M. V., & Dalgıç, A. İ. (2019). Toplum Sağlığı İçin Giderek Artan Tehlike Aşı Reddi Önlenebilir mi? *Güncel Pediatri*, 17(3), 424–434.

Ekşi, H. and Çelik, H. (2008). Söylem Analizi. *Marmara Üniversitesi Atatürk Eğitim Fakültesi Eğitim Bilimleri Dergisi*, 27, 99-117.

Gökçe, O. (2006). İçerik analizi: Kuramsal ve pratik bilgiler. Siyasal kitabevi.

Gözlü, K. (2020). Sağlığın sosyal bir belirleyicisi: Sağlık okuryazarlığı. Medical Journal of Suleyman Demirel University, 27(1).

Gülcü, S., & Arslan, S. (2018). Çocuklarda Aşı Uygulamaları: Güncel Bir Gözden Geçirme. *Düzce Üniversitesi Sağlık Bilimleri Enstitüsü Dergisi*, 8(1), 34–43.

Gür, E. (2019). Aşı kararsızlığı-aşı reddi. Turk Pediatri Arsivi, 54(1), 1–2. PMID:31217703

Hoşgör, D. G. (2014). İletişim ve sağlık iletişimi (Master's Thesis). Beykent Üniversitesi.

İlter, H. (2020). Konya ilinde çocukluk çağı aşı reddi konusunda anne-baba görüşleri ve aşılamayı etkileyen faktörler (Master's Thesis). Necmettin Erbakan Üniversitesi, Sağlık Bilimleri Enstitüsü.

İnal, A. (1996). *Haberi Okumak*. Temuçin Yayınları.

Kader, Ç. (2019). Aşı Karşıtlığı: Aşı Kararsızlığı ve Aşı Reddi. *ESTÜDAM Halk Sağlığı Dergisi*, 4(3), 377–388. doi:10.35232/estudamhsd.590304

Kata, A. (2010). A postmodern Pandora's box: Anti-vaccination misinformation on the Internet. *Vaccine*, 28(7), 1709–1716. doi:10.1016/j.vaccine.2009.12.022 PMID:20045099

Kaya, A. (2016). Sağlık konulu yayıncılık etik ilkeleri (PhD Thesis). Anadolu üniversitesi.

Keskin, M. (2015). Görsel medya ve kamuoyu ilişkisi: Televizyonda siyasi tartışma programlarının söylem analizleri (Master's Thesis). Maltepe Üniversitesi.

Khan, Y. H., Mallhi, T. H., Alotaibi, N. H., Alzarea, A. I., Alanazi, A. S., Tanveer, N., & Hashmi, F. K. (2020). Threat of COVID-19 Vaccine Hesitancy in Pakistan: The Need for Measures to Neutralize Misleading Narratives. *The American Journal of Tropical Medicine and Hygiene*, *103*(2), 603–604. doi:10.4269/ajtmh.20-0654 PMID:32588810

Moorhead, S. A., Hazlett, D. E., Harrison, L., Carroll, J. K., Irwin, A., & Hoving, C. (2013). A new dimension of health care: Systematic review of the uses, benefits, and limitations of social media for health communication. *Journal of Medical Internet Research*, 15(4), e85. doi:10.2196/jmir.1933 PMID:23615206

National Health Service (NHS) in England. (2012, September 19). *Half of medical reporting 'is subject to spin'*. https://www.nhs.uk/news/medical-practice/half-of-medical-reporting-is-subject-to-spin/

Özata, F. Z., & Kapusuz, S. (2019). Aşı kararsızlığı ve aşı reddi konusuna sosyal pazarlama bakış açısından çözüm önerileri. *Anadolu Üniversitesi İktisadi ve İdari Bilimler Fakültesi Dergisi*, 20(1), 65–83.

Palancı, Y. (n.d.). *Bağışıklama ve bağışıklama hizmetleri*. https://www.dicle.edu.tr/Contents/7e7559eb-5926-4303-bc6b-dd94d4d1e49c.pdf

Park, H., Rodgers, S., & Stemmle, J. (2013). Analyzing health organizations' use of Twitter for promoting health literacy. *Journal of Health Communication*, 18(4), 410–425. doi:10.1080/10810730.2012.7 27956 PMID:23294265

Puri, N., Coomes, E. A., Haghbayan, H., & Gunaratne, K. (2020). Social media and vaccine hesitancy: New updates for the era of COVID-19 and globalized infectious diseases. *Human Vaccines & Immunotherapeutics*, 1–8. doi:10.1080/21645515.2020.1780846 PMID:32693678

Royal Society for Public Health. (2019). *Moving the needle: promoting vaccination uptake across the life course*. https://www.rsph.org.uk/our-work/policy/vaccinations/moving-the-needle-promoting-vaccination-uptake-across-the-life-course.html

Wilson, S. L., & Wiysonge, C. (2020). Social media and vaccine hesitancy. *BMJ Global Health*, *5*(10), e004206. doi:10.1136/bmjgh-2020-004206 PMID:33097547

Yanık, H. (n.d.). Hürriyet, Cumhuriyet, Zaman ve Ortadoğu gazetelerinin Diyarbakır'da 21 Mart 2013'te yapılan nevruz kutlamaları sırasında Abdullah Öcalan'ın vermiş olduğu mesajlara 22 Mart 2013'te ilk sayfadan bakısları. http://www.academia.edu/3793872 /Söylem Analizi

Yaqub, O., Castle-Clarke, S., Sevdalis, N., & Chataway, J. (2014). Attitudes to vaccination: a critical review. *Social Science & Medicine*, 112, 1–11.

Yüksel, E. (2015). Sağlık iletişiminin anatomisi. In A. Z. Özgür & A. İşman (Eds.), İletişim Çalışmaları 2015 inside (pp. 249-260). Sakarya Üniversitesi Yayınları.

ADDITIONAL READING

Aker, A. A. (2018). Aşı Karşıtlığı. *Toplum ve Hekim Dergisi.*, 33(3), 175–186.

Basch, C. H., & MacLean, S. A. (2019). A content analysis of HPV related posts on Instagram. *Human Vaccines & Immunotherapeutics*, 15(7-8), 1476–1478. doi:10.1080/21645515.2018.1560774 PMID:30570379

Evrony, A., & Caplan, A. (2017). The overlooked dangers of anti-vaccination groups' social media presence. *Human Vaccines & Immunotherapeutics*, 13(6), 1475–1476. doi:10.1080/21645515.2017.12 83467 PMID:28406737

Hoffman, B. L., Felter, E. M., Chu, K. H., Shensa, A., Hermann, C., Wolynn, T., Williams, D., & Primack, B. A. (2019). It's not all about autism: The emerging landscape of anti-vaccination sentiment on Facebook. *Vaccine*, *37*(16), 2216–2223. doi:10.1016/j.vaccine.2019.03.003 PMID:30905530

Hussain, A., Ali, S., Ahmed, M., & Hussain, S. (2018). The anti-vaccination movement: A regression in modern medicine. *Cureus*, *10*(7). Advance online publication. doi:10.7759/cureus.2919 PMID:30186724

Larson, H. J., Jarrett, C., Eckersberger, E., Smith, D. M., & Paterson, P. (2014). Understanding vaccine hesitancy around vaccines and vaccination from a global perspective: A systematic review of published literature, 2007–2012. *Vaccine*, 32(19), 2150–2159. doi:10.1016/j.vaccine.2014.01.081 PMID:24598724

MacDonald, N. E. (2015). Vaccine hesitancy: Definition, scope, and determinants. *Vaccine*, *33*(34), 4161–4164. doi:10.1016/j.vaccine.2015.04.036 PMID:25896383

McClure, C. C., Cataldi, J. R., & O'Leary, S. T. (2017). Vaccine hesitancy: Where we are and where we are going. *Clinical Therapeutics*, *39*(8), 1550–1562. doi:10.1016/j.clinthera.2017.07.003 PMID:28774498

Mitra, T., Counts, S., & Pennebaker, J. W. (2016, March). Understanding anti-vaccination attitudes in social media. In *Tenth International AAAI Conference on Web and Social Media*.

Moran, M. B., Lucas, M., Everhart, K., Morgan, A., & Prickett, E. (2016). What makes anti-vaccine websites persuasive? A content analysis of techniques used by anti-vaccine websites to engender anti-vaccine sentiment. *Journal of Communication in Healthcare*, 9(3), 151–163. doi:10.1080/17538068.2 016.1235531

Smith, N., & Graham, T. (2019). Mapping the anti-vaccination movement on Facebook. *Information Communication and Society*, 22(9), 1310–1327. doi:10.1080/1369118X.2017.1418406

Widdus, R., & Larson, H. (2018). Vaccine mandates, public trust, and vaccine confidence: Understanding perceptions is important. *Journal of Public Health Policy*, *39*(2), 170–172. doi:10.105741271-017-0117-5 PMID:29568036

KEY TERMS AND DEFINITIONS

Anti-Vaccination/Vaccine Refusal: It is the state of refusing all vaccinations, not getting vaccinated voluntarily.

AYMD/Aşı Yaptırmaya Mecbur Değilim [Hareketi]: [movement of] I Do Not Have to Be Vaccinated. **Discourse Analysis:** It is a qualitative, interpretative research method used in applied linguistics and social sciences. Because of this interpretation activity, it is also used in the forms of "critical discourse analysis" or "critical discourse analysis". Critical discourse analysis highlights themes such as power, domination, hegemony, class difference, gender, race, ideology, discrimination, interest, gain, reconstruction, transformation, tradition, social structure, or social order and deals with these issues as a research area.

Health Communication: It is the communication carried out towards target groups regarding health in order to increase the quality of life of the individual and society.

Immunization: It is the process of protecting the person against disease by vaccination or similar means.

Immunization Services: It is an important primary health care service carried out to prevent infants, children, or adults from catching these diseases by vaccinating them before the period when the risk of infection is highest.

Social Media: With the introduction of Web 2.0, it is a media system that enables one-way information sharing to be accessed double-sided and simultaneously. Also social media; refers to the whole of the dialogues and shares that people make with each other on the Internet.

Vaccination: It is the process of giving antigenic substances to a living thing to develop immunity against diseases.

Social Media and Health Communication

Vaccine: Chemicals that contain very low doses, conjugated, diluted and attenuated pathogenic microorganisms (i.e., viruses, bacteria), and/or their polysaccharides, given to the body to provide immunity against certain diseases.

Vaccine Hesitancy: Although vaccine availability is possible, it means a delay in accepting the administration of some vaccines or not allowing some vaccines to be administered.

ENDNOTE

In discourse analysis, messages that include discourse and are subject to analysis are defined as text.