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Aşılama Sürecinden Hemen Önce Dijital Medyada COVID-19 Aşıları ile İlgili Haberlerin İçerik Analizi

Content Analysis of COVID-19 Vaccines-Related News in Digital Media Immediately before the Vaccination Process

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ÖZ

Amaç: Bu çalışmada aşı ile ilgili haberlerin içeriğini dijital haber ortamında değerlendirmeyi amaçladık.

Materyal ve Metot: Tanımlayıcı nitelikteki bu çalışmanın verileri, en çok ziyaret edilen üç gazete (Sabah, Hürriyet, Milliyet) ve üç haber sitesinde (habertürk.com, haberler.com, haber7.com) geriye dönük olarak Türkiye'de aşılama uygulamalarının başlamasından hemen öncesinde 14.11.2020-14.12.2020 tarihleri arasında, "COVID-19" ve "aşı" kelimelerinin geçtiği haberler incelenerek toplanmıştır.

Bulgular: İncelenen 1296 haberin %64,9'unda haberin kaynağı belirtilmiştir. Haberlerin; %98,5'inde aşının içerdiği maddelerden, %74,3'ünde aşının üretilme şekli ve içeriğinden, %58,7'sinde aşı çalışmasının içinde bulunduğu fazdan, %89,3'ünde aşı çalışmasının hangi yaş aralığında yapıldığından, %65,6'sında aşının ne sıklıkla bağışıklık oluşturduğundan, %82,9'unda aşının doz aralıklarından bahsedilmemiştir.

Sonuç: COVID-19 salgını ile mücadelede medyanın haberlerinde uzman görüşlerini daha sık sağlamak ve okuyucularına bilimsel bilgileri iletmek önemli bir sorumluluktur.

Anahtar Kelimeler: COVID-19 aşıları, haberler, salgınlar

ABSTRACT

Objective: In this study aimed to evaluate the content of vaccine-related news in the digital news environment.

Materials and Methods: The data of this descriptive study were collected retrospectively by examining the news with the words "COVID-19" and "vaccine" published on the websites of the three most visited newspapers (Sabah, Hürriyet, Milliyet) and three news sites (habertürk.com, haberler.com, haber7.com) between the dates of 14.11.2020-14.12.2020 before the vaccination administrations started in Turkey.

Results: In 64.9% of 1296 news, source of the information in the news was specified. In 98.5% of the news, the content of the vaccine, in 74.3% of the news, the method, and scope of the vaccine, in 58.7% of the news, the current phase of the vaccine study, in 89.3% of the news, the age range of the vaccination study, in 65.6 % of the news, how often the vaccine produces immunity and in 82.9% of the news, the dose ranges of the vaccine were not mentioned.

Conclusion: It is an essential responsibility for the media to provide expert opinions more frequently in their news and to convey scientific information to their readers in the fight against the COVID-19 pandemic.

Keywords: COVID-19 vaccines, news, outbreaks

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INTRODUCTION

The COVID-19 (Coronavirus disease 2019) outbreak in China in December 2019 was declared as a pandemic in March 2020. The whole world has focused on vaccine studies, considered as the only solution for the COVID-19 pandemic, continued for more than a year.

Vaccination started with variola in the World, and the fatality of this disease decreased from 30% to 2% with the vaccination. This technique has reached many regions in the World, including China to Central Asia, the Caucasus and, Turks.[1,2]

Vaccination studies against COVID-19 started from the first month of the pandemic. As of March 17, 2021, 186 randomized controlled studies with different technologies, 61 non-randomized controlled studies have been conducted, and 108 of them have been started to be implemented in patients. Inactivated virus vaccines, live virus vaccines, recombinant viral carrier vaccines, nucleic acid-containing vaccines, protein subunit-containing vaccines, and many vaccines containing virus-like particles are currently under development.[3]

Scientists have produced vaccines faster than ever before in the pandemic with new technology methods.[4]

By November 2020, vaccines produced by Pfizer / Biontech, Moderna, Sinovac, Sputnik V, and Oxford University in collaboration with AstraZeneca have received pre-approval. Vaccination administrations have been started in many countries. At this point, vaccines developed against COVID-19 have received a significant amount of media coverage; and these news has become the most important source of information among the masses about the trust in vaccination and information about the vaccine. Nowadays, it is possible to reach the news through the internet sites in digital media as well as the traditional media channels such as newspapers, radio and television.[5]

In a study conducted in our country, the developments regarding the Covid 19 vaccine are primarily followed via social media (65.2%), followed by the internet news site (58.9%) and television (58.9%).[6]

The use of social media and digital news sources has increased with time spent at home. The number of news about COVID-19 and vaccines continues to grow day by day. News sources are renewed every day with new developments. Thus, reaching accurate and scientific news sources has gained importance in terms of guiding the public.[7]

News about vaccines, which are very important in establishing community immunity, effectively raises public awareness. This study, aimed to evaluate the vaccine-related news of the digital news sites that the society applied to get information about vaccines.

MATERIALS AND METHODS

Ethics Committee Approval: Permission was obtained from the University Non-Invasive Ethics Committee (Date: 30.06.2021, decision no: 374). This study was carried out in accordance with international declarations, guidelines, etc.

Study Design: The data of this descriptive study were collected retrospectively by examining the news with the words "COVID-19" and "vaccine" published on the websites of the three most visited newspapers (Sabah, Hürriyet, Milliyet) and three news sites (habertürk.com, haberler.com, haber7.com) between the dates of 14.11.2020-14.12.2020, which are the dates before the vaccination administrations started in Turkey. Vaccination against COVID 19 disease in Turkey started on January 14, 2021. One thousand nine hundred twenty-three news articles containing the searched words were detected, 1296 in an informative manner about vaccination studies. The remaining 626 news items were not included in the study because they were considered as being political, repetitive, and not related to vaccination.

Data Collection: For the selection of the most visited websites of newspapers and news websites in the internet environment, the subheadings of "Newspapers" and "News" were searched under the "Turkish Press and Publication" category on www.alexa.com. Online news sources have determined the websites of the three most visited newspapers (Sabah, Hürriyet, Milliyet) and three news websites (habertürk.com, haberler.com, haber7.com) in the selected date range. All news with the words "COVID-19" and "vaccine" between the aforementioned dates in the websites of newspapers and news websites as mentioned above were examined by

using the "Google Advanced Search" option.

The data regarding the range of the news were recorded in an information form via Google forms consisting of 32 questions. The assessed parameters for the content of the news in the study are "The compatibility of the news content with the title", "The way the vaccine is mentioned in the news (country name, trade name)", "The current phase of the vaccine study", "Vaccination studies (in which phase, how many people are involved in, the transition to the next phase, age groups included in, side effects)", "Antibody response or cellular immunity of the vaccine", "Vaccine storage conditions", "Vaccine development and application methods, conditions to be considered during the application", "How the source of information was stated in the news".

Statistical Analysis: The data was statistically analyzed using SPSS 21.0. Results were expressed in numbers and percentages.

RESULTS

A total of 1296 news were examined, and in 64.9% of the news, the source of information was specified. In 50.9% of the news, vaccines were mentioned by trade name; and in 22.4% of the news, they were mentioned by the name of the country in which they are produced. In 18.6% of the news, there was no mention of the vaccines' country or trade name (Table 1). Biontech-Pfizer was mentioned in 49.4%, Sinovac in 26.0%, Moderna in 16.9%, Oxford in 10.0%, and Sputnik V in 5.3% of the news. No brand or company name was mentioned in 20.2% of the news. 41.3% of the news gave information on the phase studies. The percentage of immunity produced by the vaccine was not mentioned in 65.6% of the news, while it was stated that it was effective as 90-94% in 22.9%, and 95-100% in 9.5% of the news (Table 1).

While the trade names of the vaccine are not mentioned in about one-fifth of the vaccine news, and the first three of the mentioned trade names are Biontech-Pfizer, Sinovac, and Moderna, respectively. In 58.7% of the news from the study phase of the vac-

Table 1. The content of the news regarding the origin, production technique, current phase and the participants, immunization capacity of the vaccines.

	Content features	n	%
The status of the source of the news	Specified	841	64.9
	Not specified	455	35.1
Country of origin or trade names of the vaccine (s) mentioned	Trade names	660	50.9
	Country name	290	22.4
	Not mentioned	241	18.6
	Commercial + Country Name	105	8.1
Mentioned trade names of the vaccines*	Biontech-Pfizer	640	49.4
	Sinovac	337	26.0
	Moderna	219	16.9
	Oxford Astra Zeneka	130	10.0
	Sputnik V	68	5.3
	Other	98	7.6
	Not mentioned	262	20.2
The production technique of the vaccine	Not mentioned	963	74.3
	mRNA vaccine	150	11.6
	Inactive Vaccine	144	11.1
	Other	30	2.3
	Viral vector vaccine	9	0.7
Phase of the vaccine studies	Not mentioned	761	58.7
	Phase 1	53	4.0
	Phase 2	45	3.5
	Phase 3	431	33.3
	Phase 4	6	0.5
Participants of the vaccine studies	Not mentioned	1157	89.3
	0-18 age group	9	0.7
	18-65	69	5.3
	18 years old and over	6	0.5
	65 years old and over	55	4.2
Immunization percentages of the vaccine	Not mentioned	850	65.6
	95-100%	123	9.5
	90-94%	292	22.9
	80-89%	12	0.9
	70-79%	19	1.5

n: Number of news items; %: Percentage of news items; *: More than one vaccine was mentioned in a news.

Table 1. Continue.

Dose intervals of the vaccine	Not mentioned	1075	82.9
	2 doses with an interval of 21 days	110	8.5
	2 doses with an interval of 28 days	37	2.9
	Other	74	5.2
Content About the Administration Method of the Vaccine	Included	31	2.4
	Not included	1265	97.6
Total		1296	100.0

n: Number of news items; %: Percentage of news items; *: More than one vaccine was mentioned in a news.

cine, the vaccine is mentioned in 65.6% of the news of the immunization level (Table 1).

The situations to be considered in vaccines are covered in 24.2% to 2.8% of the news (Table 2).

Fever, weakness, and anaphylaxis are the first three of the side effects or complications mentioned in the news (Table 3).

In 0.1% of the news examined, it was mentioned that vaccines contain pig additives and eggs, 0.1% contain heavy metals and other substances, and 0.2% contain heavy metals. In 1.3% of the news, it was stated that the vaccine had other unspecified substances. However, it was determined that 98.5% of the news did not mention the substances contained in the vaccine.

The order of vaccinating the target masses of the vaccines (health workers in the first step, service workers in the second step and lastly, the remaining of the public) was highlighted in 313 news (24.2%), but not mentioned in 983 news (75.8%).

The positive, neutral or negative impact of each news content on the reader was also noted by the data collectors in the research team. It was stated that 55.2% of the news did not affect the researcher's attitude towards vaccination positively or negatively, while 41.3% of the news positively and 3.5% of the news negatively affected the reader's attitude.

DISCUSSION AND CONCLUSION

This study evaluated the content of the news in the digital environment about COVID-19 vaccines in a one month before the first COVID-19 vaccine administrations started in Turkey.

World Health Organization (WHO) announced ten important issues threatening global health in 2019, vaccine instability.[8] The importance of vaccine instability, a fundamental problem for public health, has increased with the pandemic.

During a pandemic, the news media play a crucial role in communicating public health and policy information. In epidemic situations, people tend to turn to the media to get information about the current status of the epidemic. The presence of accurate information and misinformation and uncertainties in

Table 2. The status of emphasizing the principles to be considered on vaccines in the news.

Content features	**n**	**%**
News about the target masses of the vaccines	313	24.2
News about possible vaccine-related side effects	161	12.4
News about vaccination without any payment	131	10.1
News emphasizing the need to follow the mask, distance, hygiene rules after the first dose of vaccine	98	7.6
News highlighting the situations that need to be considered during vaccination or between vaccine doses	92	7.1
News providing information about vaccines' protection periods	35	2.8

n: Number of news items; %: Percentage of news items.

Table 3. Distribution of side effects or complications highlighted in the news.

Side effects or complications in the news	**n**	**%**
Fever	50	3.9
Weakness	42	3.2
Anaphylaxis	14	1.1
Rash	9	0.7
Nausea, vomiting	7	0.5
Swelling	4	0.3
Itching	3	0.2
Other	32	2.5
Total	161	12.4

n: Number of news items; %: Percentage of news items.

the media circulation can jeopardize compliance with anti-pandemic regulations and create vaccine hesitancy.[9]

For the news to be reliable, it is important to indicate the source of the news, whether it is news from the institution or leading to the website of the ministry of health. In this study, the source of two-fifths of the news was not specified.

The study determined that the news channels were insufficient on many questions about the vaccine, such as which age groups to apply, in which order, possible side effects, whether it would be paid or not. This is thought to be due to the fact that scientific studies are new and have not reached the level of evidence. It is difficult to report on the state of scientific knowledge during a nascent epidemic.[10,11]

Informing individuals about vaccines has a positive effect on the compliance of vaccination.[12] Thus, education and correct information through the media are essential in vaccinating individuals and improving public health.

In a study that investigated electronic news sources, which was conducted in France in 2016, it was reported that vaccine-related searches were made on average 330 thousand times each month using the Google search engine and that access to health-related information on the internet attracted more people due to free, continuous and anonymous access.[13]

In a similar study conducted by Teker by scanning all the news about vaccination from the websites of three newspapers (Sabah, Hürriyet, and Milliyet) between 2015 and 2018, he reported that 74.1% of the news included positive statements about the vaccine and 3.5% included negative comments.[14] In the present study, it was found that while 41.3% of the news had positive statements about vaccines, 3.5% had negative statements. The difference between the number of news with positive statements in the two studies may be because the production of COVID-19 vaccines is newer and has been developed rapidly. However, the number of negative statements in the news about vaccines were similar in the two studies.

Similarly, in a study by Çelik et al. on the vaccine news published in newspapers between 2014 and 2018, it was stated that 80.5% of the news included positive statements about the vaccine. This statement also supports the finding that the number of positive stated news about COVID-19 vaccines in our study is lower than in the pre-pandemic period.[15]

In another study, positive statements were made about the Phase-3 vaccine studies and the news about the vaccination process. The study stated that 63.3% of the news had positive expressions, 14.1% aroused curiosity, and 11.6% used negative expressions.[16]

According to the study conducted by Çelik et al., 92.8% of the articles in which expert opinion was reported about the vaccine had positive content, while only 58.0% of the news without expert opinion had positive content.[15] This difference shows that the lack of a source that could be an authority on the subject may mislead readers.

In this study, it is observed that only 64.9% of the news reported the source of the information while source was specified in 80.8% of the news in the research of Teker.[14] In another study, it was stated that the source of most of the news about the vaccine was unclear.[17] The low percentage of giving the source of information in the news that we reported may be due to producing more news in a shorter time on the COVID-19 vaccine topic, which is constantly on the agenda during the pandemic. However, news without specifying the source can lead the readers to take non-scientific knowledge.

In this study, while the frequency of mentioning the vaccines was Biontech, Sinovac, Moderna, in another study, it was stated that the type of vaccine was not mentioned in the news very often and Biontech, Sinovac vaccines were followed by the Sputnik vaccine in the 3rd place. Mostly local vaccine was rarely mentioned at the time of the study.[18]

In this study, 98.5% of the news did not mention the heavy metals, pig products, and eggs contained in the vaccine, which may cause readers to be vaccinated. It is also striking that 87.6% of the news in our study did not mention any side effects of vaccines. On the other hand, in most of the countries, vaccination had not been started, and side effects could not be fully detected at the time of the study.

In this study, observed that 92.9% of the news did not mention the situations that should be considered during the vaccination or between the vaccine doses, and in 92.4% of the news, the advice on the rules should be followed after the first dose of vaccine such as mask, distance, and hygiene rules was not given. Thus, we consider that the readers do not get enough information about the process after the vaccination from the news. Accordingly, we suggest that this information should be provided to individuals by healthcare professionals or the Ministry of Health.

The data of this research does not lead to a definite vaccine opinion and is not within the scope to change the current opinions. The widespread and easily accessible media and excess news diversity reduce the quality of news content. This is supported by our observation that "not mentioned" option was mostly recorded in the information form in this study. According to the "privacy of the human body law" people are free to be vaccinated or not. However, it is the individuals'responsibility to research, obtain and evaluate information correctly.

The process of developing vaccines can take decades, considering the safety precautions and the time required to develop the immune response. Vaccines against COVID-19 were approved within months for the first time in history, a unique situation occurred with the pandemic. The significant treatment of COVID-19 to public health has accelerated the vaccine development studies, and the procedures have been changed specifically for COVID-19. It is a fact that this situation is experienced for the first time and has many unknowns, with different immunity and side effects in each individual.

In conclusion, the most important task of the media for the pandemic is to present accurate news to the public by referring to the statements of scientists. It would be appropriate for the readers to be media literate, to check the source of the news while evaluating the news, to approach unsourced news with suspicion, and not to share the news that they are not sure of. In the pandemic process, where scientists learn new information every day, the press should obtain current information from official scientific boards and official institutions such as the Ministry of Health, which will facilitate spreading the announcements about the pandemic.

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