



Vaccination Refusal Debate on Social Media in Turkey: A Content Analysis of the Comments on Instagram Blogs

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Abstract

Background: This study was conducted to identify the reasons for vaccine refusal of individuals/parents by analyzing the comments on the pages screened with the keyword vaccine refusal on social media.

Methods: Qualitative and quantitative methods were used in the study. Within the scope of the study, 7 pages, 216 posts and 3446 comments found with the keyword #vaccine refusal were analyzed. The comments obtained within the scope of the study were evaluated using content analysis and theme analysis methods. The study data were collected between Sep 1st and 11th, 2020.

Results: The comments on vaccine refusal were found to increase in 2018 and 2019, especially in September, October, November, and December. The reasons for vaccine refusal were grouped under 2 themes as individual reasons and vaccine-related reasons as a result of the analysis of the comments. The most commonly used word in the text analysis, consisting of 10,428 words mentioned in the posts, was found to be vaccine (3.2%).

Conclusion: Individuals/parents refuse vaccination for reasons such as distrust of vaccine content, disbelief in the need for vaccines, distrust of pharmaceutical companies, previous experiences, like-minded people/platforms, religious reasons, and preference for alternative health care approaches.

Keywords: Child; Parent; Qualitative research; Social media; Vaccine; Vaccine refusal

Introduction

Social media platforms have become a global and socio-economic phenomenon, where people can unlimitedly share their feelings and thoughts (1). Social media platforms allow individuals to communicate and connect with different people, and to share ideas and thoughts in daily life without borders (2). Today, approximately a third of the 8 billion people in the world are known to actively use social media platforms such as Facebook, Twitter, Instagram, YouTube, and this

number is estimated to increase each passing day (3). The globally increasing use of social media provide a platform for people to share information, thoughts and opinions freely in many areas, such as nutrition and fitness, drug use, preferred health care institutions, the traditional and complementary medicine practices, baby care, child, and so on (4,5).

Over time, this increase in the use of social media platforms has also created areas where individuals



share their thoughts about vaccination (6). Anti-vaccine people, who reach a large number of people on social media platforms to freely share information that is not based on evidence, lead to a significant increase in cases of 'vaccine refusal' (5,7-10). Vaccine refusal is an individual's refusal to use all vaccines and vaccinations of his/her own free will (11), and according to the WHO data, there are 20 million unvaccinated children worldwide (12).

In a study conducted with public health professionals and social media experts reported that individuals are influenced by false and unsubstantiated vaccine-related information on social media, and celebrities who support vaccination refusal on social media cause individuals/parents to refuse vaccination (10). Vaccination refusal is increasing with the spread of online information sharing, especially through web 2.0 platforms, and that individuals who refuse vaccination cite celebrities who advocate the same view (13). In a different study on the subject, incorrect information on social media, such as the vaccines cause autism and contain toxins, is the reason why individuals refuse the vaccines, and parents refuse the vaccination since they do not trust the content of the vaccines (14). In a study conducted on YouTube reports that misinformation about the vaccinations spreads very quickly on social media platforms, reaching a large number of people, paving the way for vaccine refusal (15). In a study on Facebook, families are affected by individuals, blogs that advocate the vaccination refusal, and that they refuse vaccination since they believe vaccines contain toxic and harmful substances, and development of natural immunity in children is more important (16). On Twitter reported that vaccine rejection statements on Twitter affect parents, and that sharing information with social media is faster than written sources (17).

This study was conducted to identify the reasons for vaccine refusal of individuals and parents by analyzing the comments on the pages screened with the keyword vaccine refusal on social media since vaccination refusal is a global public health problem and since the posts shared on social

media platforms may result in vaccination refusal in parents and individuals.

Materials and Methods

This study was conducted using qualitative and quantitative methods based on descriptive phenomenological approach in order to identify the reasons for vaccine refusal of individuals and parents by analyzing the comments on the pages screened with the keyword #vaccinerefusal on social media (18-20).

Location of the Study

The research was conducted via Instagram, one of the most commonly used social media platforms. The lack of character (letter) restriction and the fact that it is one of the most commonly used social media platforms in Turkey are the reasons to choose Instagram as the platform of the study.

Study Inclusion and Exclusion Criteria

The research included publicly shared Turkish posts and comments, screened with the keyword #vaccinerefusal on Instagram. Posts and comments outside these criteria were excluded.

Data Collection

After obtaining approval from the Ethics Committee, the data were collected by screening public pages on Instagram using #aşireddi (#vaccinerefusal) in Turkish language between September 1st and 11th, 2020. Personal pages and blogs of individuals were not examined as part of the research.

Data Analysis

The study data were analyzed using SPSS 24.0 package program (IBM Corp., Armonk, NY, USA), and presented using numbers and percentages. Inductive approach and content analysis were used in the analysis of the data.

The comments obtained within the scope of the research were transferred to a Word file by the researchers and a dataset of approximately 155

pages was obtained. The data were analyzed at different times by the two researchers. Comments obtained grouped under two categories based on consensus in line with the literature. Comments grouped under these main categories were read repeatedly, identifying and conceptualizing similarities in expressions. In this way, the main theme and sub-themes were determined. Attention has been paid to the resulting themes and sub-themes to form a meaningful whole to reflect the concept map. The concept map obtained was checked by the researchers, then examined by an expert and given its final version. After the theme and sub-themes were created, emojis, contact tags, etc. from the data set were

extracted and a word cloud was created using the MAXQDA 2020 program.

Ethical approval

Ethical approval for the research was obtained from Artvin Çoruh University Ethics Committee (no: 18457941-050.01.04, date: 08/26/2020-2020/11).

Results

The page names, number of posts and comments examined within the scope of the research is given in Table 1.

Table 1: Pages examined within the scope of the research and their features

<i>The page name</i>	<i>Number of post</i>	<i>Number of comment</i>
#aşireddi	127	2463
#aşireddinehayır	39	692
#asireddi	34	167
#aşireddicanalır	9	24
#aşireddiye	5	87
#aşireddienginmelek	1	13
#aşireddinedenleri	1	-
Total	216	3446

Within the scope of the study, 7 pages were accessed with the keyword 'vaccination refusal' and a total of 216 posts and 3,446 comments were analyzed. Information about the posts analyzed

within the scope of the research is given in Table 2. Vast majority of posts on the pages analyzed were shared in 2019 (51.8%) and as images (68.5%).

Table 2: Features of the shares examined within the scope of the research

<i>Features</i>	<i>n</i>	<i>%</i>
Post type		
Picture	148	68.5
Video	35	16.2
News	33	15.3
Post year		
2020	56	25.9
2019	112	51.8
2018	46	21.3
2017 and 2016	2	1.0
Total	216	100

Looking at the yearly distribution of vaccine refusal-related posts examined within the scope of the study, the number of posts was very small in 2016 and 2017, and increased in 2018 and 2019. Looking at the distribution of post by months, the posts in 2018-2019 were found to increase especially in Sep, Oct, Nov, and Dec (Fig. 1). In the study, pages screened with the keyword vaccination refusal were also used nationally and internationally by individuals/parents to search for information("Can the meningitis vaccine be ad-

ministered after 5th month of age?", "Hello, I have two daughters, aged 4 and 8. Should I get them the pneumonia, meningitis vaccines again during the COVID-19 pandemic?", "Young people interested in a new business in Azerbaijan are invited, candidates will be selected after the job interviews. To set up a meeting, please write to xxxxx contact number"). Within the scope of this study, only the justifications for the causes of vaccination refusal were investigated.

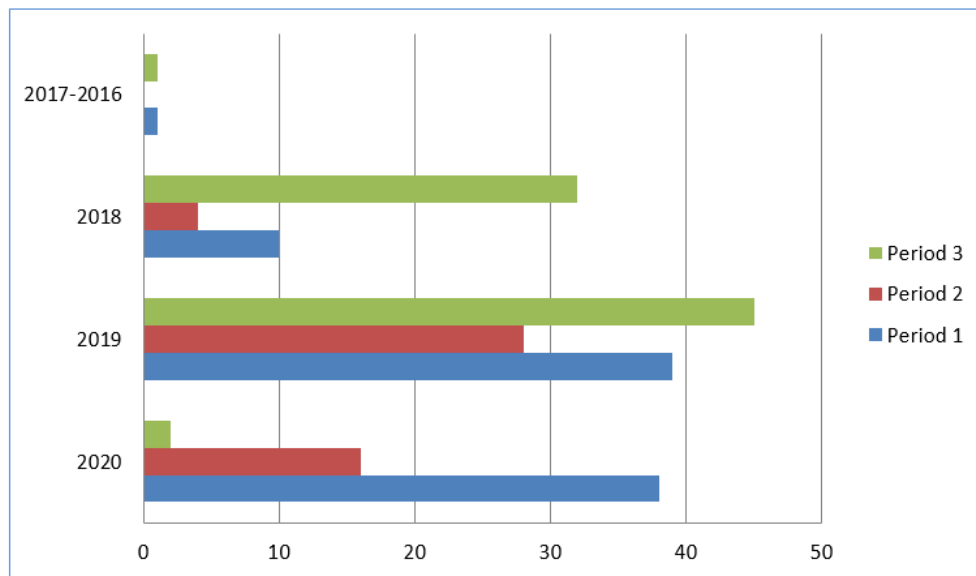


Fig. 1: Distribution of the shares examined within the scope of the research by years and periods
 Period 1: January-February-March-April Period 2:May-June-July-August Period 3:September-October-November-December

From the comments obtained within the scope of the research, two main themes for the causes of vaccination refusal were identified. These themes are the 'personal reasons' and 'vaccine-related reasons'(Fig. 2).

Personal Reasons

The causes of vaccinations refusal vary from individual to individual. The theme of personal rea-

sons consists of sub-themes of 'religious beliefs', 'previous experiences', 'like-minded people, platforms', and 'alternative approaches to health'.

Religious Reasons

These comments obtained within the scope of the study indicate that individuals/parents reject vaccination for religious reasons.

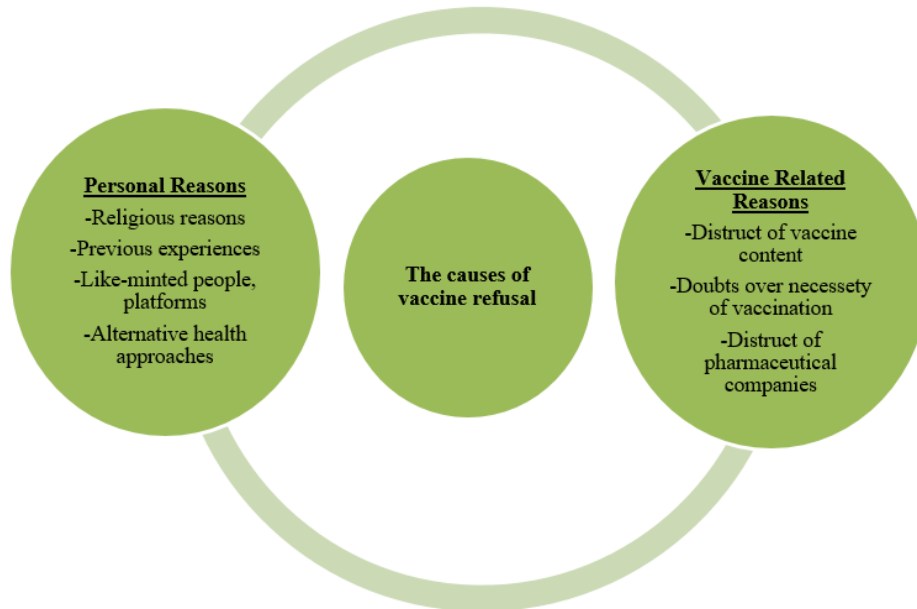


Fig. 2: Overview of Themes and Sub-Themes for Vaccine Rejection

Previous Experiences

These comments obtained within the scope the study indicate that individuals/parents reject vaccination because of previous/personal experiences.

Like-Minded People, Platforms

According to the analysis of the comments obtained within the scope of the study, individuals/parents stated that they were influenced by like-minded people and platforms, and refused the vaccination for these reasons.

Alternative Health Approaches

Based on the comments obtained within the scope of the study, individuals/families were found to refuse vaccination due to their belief that traditional and complementary medicine practices and different treatment methods are more effective than vaccines.

Vaccine-Related Reasons

Although the reasons for vaccine refusal vary from person to person, individuals/parents have stated that they refuse the vaccination for 'vaccine-related' reasons. The theme of vaccine-related reasons consists of 'distrust of the content

of the vaccines', 'doubts about the need for the vaccination', and 'distrust of pharmaceutical companies'.

Distrust of Vaccine Content

An analysis of the comments obtained within the scope of the study showed that individuals/parents refuse vaccination since they do not trust the content of the vaccines.

Doubts over Necessity of Vaccination

Considering the comments obtained within the scope of the research, individuals/parents did not believe in the need for vaccines and refused the vaccination because epidemics do not exist today.

Distrust of Pharmaceutical Companies

These comments obtained within the scope of the study indicate that individuals/families reject vaccination since they do not trust pharmaceutical companies.

In our study analysis consisting of 10,428 words as shown in Fig. 3, the most commonly used words were 'vaccine' (3.2%), 'Vaccine' (1.1%), 'measles' (0.7%), 'rejection' (0.6%), 'autism' (0.4%), 'meningitis' (0.2%), 'infectious' (0.2%), 'diseases' (0.2%), and 'hepatitis' (0.2%).

that they refused the vaccination based on their previous experiences, and that they did not vaccinate their children since they were also not vaccinated. Through Twitter, personal experiences and thoughts influence vaccine rejection and anti-vaccine movement, and that unsubstantiated news sources and sites cause individuals to refuse vaccination (8). The vaccination is associated with autism, asthma, allergies, fever, febrile seizures and neuro-developmental disorders is the cause of vaccine refusal in individuals and parents (22). Individuals and parents stated that there are people and platforms with similar thoughts so they refuse vaccination for this reason. In the study with public health professionals and scientist, anti-vaccine people and advocates on social media affect families' acceptance of vaccines and cause vaccine refusals (10). In Twitter, likelihood of vaccine rejection is 3.5 times more in those exposed to negative thoughts related to vaccination, and that unsubstantiated statements in the social media lead to vaccine rejection in individuals (6). Individuals and parents prefer alternative health approaches rather than vaccines in the prevention of diseases, and resort to complementary and alternative medicine methods such as bloodletting, leeches, and organic products. In a study with anti-vaccine people through Facebook groups, individuals refuse vaccination since they rely more on natural solutions than vaccines (9). There is a relationship between complementary and alternative medicine and vaccine refusal, and vaccine refusal rate is greater in people who rely on complementary and alternative medicine (23). An analysis of the comments, individuals and parents refuse vaccination for the vaccine-related reasons. The vaccine-related reasons include distrust of the content of the vaccines, doubts about the need for the vaccination, and distrust of pharmaceutical companies. In Wikipedia discussion community, baby centers, and the Berkeley parent's network, vaccine refusal and vaccine acceptance is based on 'trust', and that anti-vaccine people refuse vaccination since they do not trust the vaccines, while those who accept vaccination trust the vaccines (13). In Malaysia, parents refuse vaccines because vaccines are not necessary in

today's conditions, infectious diseases are no longer a threat and that they are curable (21). Parents have doubts about the effectiveness of vaccines and therefore refuse vaccines. In their study of the acceptance of the Measles-Mumps-Rubella (MMR) vaccine, parents refuse MMR vaccine on the grounds that the severity and prevalence of MMR is much lower compared to previous periods, arguing that the vaccine is ineffective (those who got MMR vaccine can get sick as well) (24). In Poland via YouTube, racist attitudes towards the European Union (EU) and the WHO and distrust of countries where vaccines are produced are the basis for public opposition to vaccines and are the reasons why individuals refuse the vaccination (15). Distrust of vaccine companies and pharmaceutical companies has increased, and this is the reason behind the vaccine refusal (22).

This research can help to reveal how social media shares affect vaccine refusal and the social media issues that cause vaccination refusal. One of the limitations of the study is that it was carried out only on Instagram, and the second is that it was performed only with the keyword 'vaccination refusal' on Instagram.

Conclusion

The reasons for vaccine refusal were grouped under personal reasons and vaccine-related categories in this study, which was carried out to identify the reasons for vaccine refusal of individuals/parents by analyzing the comments on the pages screened with the keyword #vaccinerefusal on social media. Individuals and parents were found to refuse vaccination because of their religious beliefs, previous experiences, like-minded people and platforms, and alternative health approaches. Individuals and parents refuse vaccination due to distrust of the content of the vaccines, doubts about the need for the vaccination, and distrust of pharmaceutical companies. The results of this research support previous studies on the subject. It is recommended to create an Instagram page and public service ads by

the Ministry of Health to provide accurate information on the vaccines, to inform individuals and parents regarding the safe content of the vaccines, performing studies to raise awareness towards the importance of the issue, to question the sources of anti-vaccine people, and to screen different social media platforms using different keywords, such as #notovaccines, #vaccination-refusal, in future studies.

Ethical considerations

Ethical issues (Including plagiarism, informed consent, misconduct, data fabrication and/or falsification, double publication and/or submission, redundancy, etc.) have been completely observed by the authors.

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Conflict of interest

The authors declare that there is no conflict of interests.

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