Original Article

Assessment of YouTube Videos on 6 Months-5 Years COVID-19 Vaccination in Children: What Do You Expect from a Social Media Platform?

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ABSTRACT

Objective: Parents wanted to learn more about the COVID-19 vaccine for their children and make the right and safe decision during the pandemic. The rate of information acquisition about childhood diseases from YouTube is increasing among parents.

Materials and Methods: We aimed to analyze the videos on YouTube about childhood COVID-19 vaccination between the ages of 6 months and 5 years. The video research was carried out on YouTube (https://www.youtube.com) on 12 December 2022 with the search words "children", "under 5 years", "Covid-19", "vaccine" and "6 month-5 year". We used the mDISCERN, Video Power Index (VPI) and Global Quality Score (GQ-SC) for evaluating the reliability and quality of the videos. Of the 65 videos analyzed in the study, 80% (n=52) were useful. News agencies were the group (67.7%) that posted the most videos on YouTube.

Results: mDISCERN score was found 4 (3-5) in the useful group (UG) and 1 (1-3.5) in the misleading group (MG) (p=0.003). The median GQ-SC scores of the videos broadcasted by academic sources were noteworthy higher than the other sources (p=0.032). YouTube channels with more subscribers were associated with more daily views and likes (p<0.001, both).

Conclusion: Universities and academic institutions are required to prepare and broadcast videos in with scientific data and results for society and parents. Policy makers and related government departments need to use social media platforms more effectively to inform their society accurately.

Keywords: Children, COVID-19, Vaccination, YouTube

INTRODUCTION

The COVID-19 pandemic, which started in 2020, has been a global public health problem with 776 million cases and more than 7.1 million deaths [1]. COVID-19 infection can lead to mild symptoms in children than adults, as well as diseases such as MIS-C, myocarditis, which can cause morbidity and mortality [2]. In addition to the protective and restrictive measures taken by governments in order to prevent the devastating effect of the pandemic and stop its spread, vaccine development and vaccination programs were made quickly. The vaccines developed in this context have also been used in the childhood age group [3].

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Parents have been hesitant and concerned about childhood COVID-19 vaccination due to the rapid approval of COVID-19 vaccines, the unknown long-term impact of vaccines, and reported cases of myocarditis after vaccination [4]. Parents would like to learn more about the vaccines and their side effects that they will decide to administer to their children within the scope of health practices and to make the right and safe decision for their children in line with this information [4-6]. As a result of the general lockdown measures during the pandemic period, families have started to use the internet and social media platforms more to obtain information in the field of health [7, 8]. YouTube, which is used by wide ranges from independent individuals to physicians, is a social media platform that information can be shared without being controlled or filtered [9].

The rate of information acquisition about childhood diseases from YouTube is increasing among parents [9]. Therefore, in the current study, we aimed to analyze the videos on YouTube about childhood COVID-19 vaccination between the ages of 6 months and 5 years.

MATERIALS AND METHODS

Literature Research and Eligibility

The video research was carried out on YouTube (https://www.youtube.com) on 12 December 2022 with the search words "children", "under 5 years", "Covid-19", "vaccine" and "6 month-5 year". A total of 293 videos were found after a search in the "Relevant" filter with the specified keywords and the videos included in the study were evaluated by 2 social pediatricians. The flow diagram of the study which had the inclusion and exclusion criteria has been shown in Figure 1 in detail.
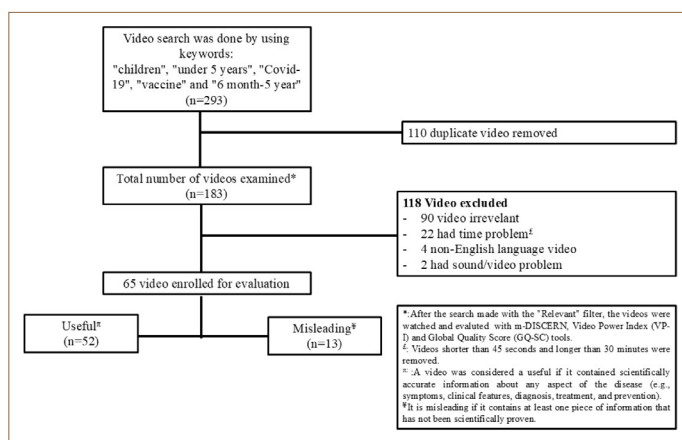

Figure 1. Flow diagram of the study.

Video Features

We included these video features to study: the number of likes, comments, views, daily views (total views/day), subscribers and duration time. The video sources were evaluated in 4 groups: academic (universities and institutes), physicians/medical doctors (MD), medical sources, and independent users (YouTubers/parents).

Assessment of Video's Quality and Reliability

65 videos determined as part of the useful evaluation were analyzed by the researchers in 2 groups: useful (UG) and misleading (MG). Videos that contain accurate and useful data about COVID-19 vaccination and do not contain inaccurate and misleading data are UG; other videos have been identified as MG.

mDISCERN is a tool used to evaluate the reliability and scientific level of health-related websites. It's a scale consisting of five questions with "yes" or "no" answers, which helps persons/parents who are looking for information about diseases to reach accurate and reliable sources. mDISCERN tool evaluates a website with the questions as "How up-to-date is the information? What is the source of the information? Who are the authors and how expert are they? How are the study results presented? Is there a conflict of interest?" and provides scoring according to the given answers [10].

Global Quality Score (GQ-SC) video scoring system is a scale used to evaluate the overall quality of a video, especially used to measure the reliability and accuracy of videos containing health, education or other information. GQ-SC evaluates the information contained in the video with the criteria of "accuracy", "source citation", "presentation quality", "objectivity", and "timelines" and provides advantages in terms of standardization, reliability and objectivity [10, 11].

In order to evaluate the general popularity of the videos in the study, the video power index (VPI) was made with the following formula: "view ratio x like ratio] / 100" as used in previous studies [12, 13].

Patient and Public Involvement

Information about the YouTube videos was obtained from a public platform. Therefore, ethics committee approval was not obtained for this study as in similar studies [12, 13].

Statistical Analysis

We used the SPSS v.24.0 program to analyze the data. Shapiro-Wilk test was used to evaluate whether the data fit the normal distribution. Kappa test was applied to evaluate the agreement between the 2 social pediatricians who evaluated the videos. Quantitative data that did not fit the normal distribution were expressed as median (min-max).

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The Mann-Whitney U test was performed for pairwise comparisons between "UG" and "MG" videos. The relationship between two quantitative parametric variables was evaluated with Spearman correlation. The Mann-Whitney U/Student's t-test was used to compare continuous variables between the two groups, as appropriate. A p-value <0.05 was considered statistically significant.

RESULTS

A total of 65 videos were examined, of which 80% (n=52) were useful and 20% (n=13) in the MG in this study. The group that broadcasted the most videos to YouTube was news agencies (67.7%), followed by medical resources and academic institutes (both 13.8%). While the rate of videos uploaded by news agencies in the UG and MG was 65.4% and 53.8%, respectively, this rate was 13.5% and 15.4% in academic institutes. While 46.2% of the videos in the UG were aimed at the society and 48.1% at the parents, this rate was 46.2% and 30.8%, respectively, in the MG (p=0.149). Other features of videos are summarized in Table 1.

The median number of daily views in the UG was 196.5 (0.42-6459), as this number in the MG was 16.5 (5.44-738.8) (p=0.376). The median value of broadcast time (month) in the UG was 7 (6-11) and in MG this value was 7 (6.5-13) (p=0.169).

mDISCERN was found to be 4 (3-5) in the UG and 1 (1-3.5) in the MG (p=0.003) (Table 2).

High agreement rates (Kappa score) (0.767 and 0.788, respectively) were found for mDISCERN and GQ-SC (p<0.001, both). In the content analysis of the videos in the MG, we found that the knowledge in 3 videos was not reliable, the knowledge in 7 videos was inaccurate, the source usage was not specified in 4 videos, and the knowledge in 6 videos was biased.

The median GQ-SC scores of the videos broadcasted by academic sources were remarkably higher than the other sources such as news agencies, independent users (p=0.032). There was no significant difference in VPI scores between both groups (p=0.067). In the mDISCERN score, academic institutes and medical resources were found to have higher scores than others (p=0.013). The comparison of all scores according to video sources is summarized in Table 3.

It was found that YouTube channels with more subscribers were associated with more daily views and likes (p<0.001, both). The duration time of the video had a significant correlation with mDISCERN and GQ-SC scores (p=0.001, p=0.001, respectively). A high correlation was found between mDISCERN and GQ-SC scores (p<0.001) (Table 4).

Table 1. Evaluating of video features in useful and misleading group

Features	Useful n=52 (80%)	Misleading n=13 (20%)	p¥
Sources, n (%)			
Academic institutions/Universities	7 (13.5%)	2 (15.4%)	0.467
Physicians	1 (1.9%)	1 (7.7%)	
Medical sources*	6 (11.5%)	3 (23.1%)	
Independent users£	4 (7.7%)	0 (0%)	
News agencies	34 (65.4%)	7 (53.8)	
Target audience, n (%)			
Society	24 (46.2%)	6 (46.2%)	0.149
Patients/Parents	25 (48.1%)	4 (30.8%)	
Undefined	3 (5.8%)	3 (23.1%)	
Video contents, n (%)			
Overview of COVID-19 vaccination	15 (28.8%)	1 (7.7%)	0.063
Protection-effect of vaccine	3 (5.8%)	4 (30.8%)	
Vaccine side effect	3(5.8%)	1 (7.7%)	
Vaccine content/dose	31 (59.6%)	7 (53.8%)	

* Medical professionals other than MD; £ YouTuber/parents; ¥ Fisher's exact test was used for evaluation.

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Table 2. Evaluation of mDISCERN, VPI and GQS scores

Variables	Useful n=52	Misleading n=13	Z score	p*
Video features, Mean (Min-Max)				
Number of per daily views[£]	196.45 (0.42-6459)	16.5 (5.44-738.8)	-1.02	0.376
Number of likes	27 (5-136)	38 (2-584.5)	-0.16	0.874
Number of comments	63.5 (12.3-275.5)	80.5 (7.3-674.3)	-0.21	0.588
Duration time (minute)	3.36 (2.26-5.91)	2.2 (1.83-5.69)	-1.03	0.621
Broadcast time[π]	7 (6-11)	7 (6.5-13)	-1.37	0.169
Number of subscribers[β]	1270 (221.5-3750)	260 (20.8-1051)	-2.01	0.045
Reliability and quality scores				
mDISCERN score	4 (3-5)	1 (1-3.5)	-2.98	0.003
GQS[¥]	4 (2-5)	1 (1-3.5)	-2.96	0.003
VPI[φ] score	0.84 (0.44-1.56)	0.99 (0.23-1.30)	-0.55	0.58

* Mann Whitney U test was used for evaluation; [£] Median (Interquartile range); [π] Month; [β] x1000; [¥] Global Quality Score; [φ] Video Power Index.

Table 3. Comparison of the reliability and quality scores according to video sources

Reliability and quality scores	Academic institutions Universities n=9 (13.8%)	Physicians n=2 (3.1%)	Medical Sources[μ] n=9 (13.8%)	Independent users n=4 (6.2%)	News agencies n=41 (63.1%)	p*
mDISCERN	5 (4–5)[£]	3 (3–5)	4 (1.5–5)	2.5 (1.3–3.8)	3 (2–4)	0.013
GQS[¥]	5 (4–5)	4 (3–4)	4 (4–5)	2.5 (1.3–3.8)	3 (2–4)	0.032
VPI[φ]	1.1 (0.5-1.6)	0.9 (0.3-1.4)	2 (0.36-5.25)	0.2 (0.1-0.5)	0.8 (0.4-1.3)	0.067

* Kruskal Wallis test was used for evaluation; [£] Median (Interquartile range); [¥] Global Quality Score; [φ] Video Power Index; [μ] Medical Sources other than MD.

DISCUSSION

This is the first study to evaluate the characteristics of English-language YouTube videos about childhood COVID-19 vaccination for ages 6 months to 5 years. We found higher GQ-SC and mDISCERN scores in the UG than in the MG (p=0.003 in both) and also GQ-SC and mDISCERN scores were significantly found higher in academic institutes and medical resources (p=0.013, p=0.032, respectively). We determined a high correlation between mDISCERN and GQ-SC (p<0.001). In addition, the channels with more subscribers were associated with the number of daily video watches and like numbers (p<0.001, both). One of the important results in the current study was that the duration time was correlated with mDISCERN/GQ-SC (p=0.001, both). Another remarkable result in our study was that news agencies had the highest ratio of uploading videos with 67.7 and 58.4% of the videos having vaccination content/dose.

The number of comments, likes and per daily views of videos used in evaluating the videos on social media are important indicators [14]. Comments, recommendations, or warnings of independent users watching videos from social media such as YouTube cause an increasing use of social media platforms [15, 16]. The varied results of video assessment criteria were found in the research related with YouTube videos conducted in pediatric health field [17-21]. In the studies conducted on vitamin D deficiency [22], autism spectrum disorders (ASD) [23], nocturnal diuresis [24] had no statistical difference between useful and misleading videos in the video engagement parameters such as the number of comments, likes or daily views. Against this, Akyol Onder et al. [18] found significant differences in the number of likes and comments in their peritoneal dialysis study. We didn't find any differences in the number of daily views, likes and comments between UG and MG. However, we found that the channels with more subscribers were associated

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Table 4. Correlation of video features and GQS/mMDISCERN scores

	Subscriber numbers	Broadcast time	Per Daily view	Like	Duration Time	mDISCERN score	GQS score	VPI
Subscriber numbers								
Corr. Coeff.¥	1	0.133	**0.518****	**0.559****	0.216	0.199	**0.281***	0.229
Sig		0.293	**<0.001**	**<0.001**	0.084	0.112	**0.023**	0.066
N	65	65	65	65	65	65	65	65
Broadcast time								
Corr. Coeff.	0.133	1	**0.347****	**0.341****	0.091	0.158	0.097	-0.168
Sig	0.293		**0.005**	**0.006**	0.472	0.209	0.441	0.180
N	65	65	65	65	65	65	65	65
Per Daily view								
Corr. Coeff.	**0.518****	**0.347****	1	**0.917****	0.128	0.166	0.180	0.043
Sig	**<0.001**	**0.005**		**<0.001**	0.310	0.187	0.151	0.733
N	65	65	65	65	65	65	65	65
Like								
Corr. Coeff.	0.559**	**0.341****	**0.917****	1	0.186	0.238	0.233	**0.294***
Sig	<0.001	**0.006**	**<0.001**		0.140	0.058	0.063	**0.019**
N	65	65	65	65	65	65	65	65
Duration Time								
Corr. Coeff.	0.216	0.091	0.128	0.186	1	**0.415****	**0.402****	0.225
Sig	0.084	0.472	0.310	0.140		**0.001**	**0.001**	0.072
N	65	65	65	65	65	65	65	65
mDISCERN score								
Corr. Coeff.	0.199	0.158	0.166	0.238	**0.415****	1	**0.930****	**0.294***
Sig	0.112	0.209	0.187	0.058	**0.001**		**<0.001**	**0.017**
N	65	65	65	65	65	65	**65**	65
GQS score								
Corr. Coeff.	**0.281***	0.097	0.180	0.233	**0.402****	**0.930****	1	**0.269***
Sig	**0.023**	0.441	0.151	0.063	**0.001**	**<0.001**		**0.030**
N	65	65	65	65	65	65	65	65
VPI								
Corr. Coeff.	0.229	-0.168	0.043	**0.294***	0.225	**0.294***	**0.269***	1
Sig	0.066	0.180	0.733	**0.017**	0.072	**0.017**	**0.030**	
N	65	65	65	65	65	65	65	65

* Correlation is significant <0.05 level; ** Correlation is significant at the 0.01 level (2-tailed); ¥ Spearman correlation coefficient.

with the number of daily video watches and like numbers. We thought that the majority of the videos were uploaded by global news agencies that have millions of subscribers, playing an important factor in finding this correlation result.

In the YouTube videos evaluation of Spanish meningococcal B vaccine, it was shown that 45.2% of the videos were broadcasted by news agencies [25]. In another meningococcal B vaccine study this ratio was found as 28.6% [21]. In the study

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of COVID-19 vaccine videos on YouTube during pregnancy, this rate was found to be 44% [26]. Videos were broadcasted by news agencies sources with a rate of 67.7, which is higher than the literature in our study. There were several reasons for this result. Firstly, the fact that the COVID-19 pandemic and vaccination program to be implemented for the period between 6 months and 5 years age for the first time shows that news agencies are making these videos more for informational purposes and also news agencies' rapid access to large audiences was another effective factor. Secondly, it shows that video uploads and views are higher in the USA, United Kingdom and Australia, due to the vaccination permit given to the age group specified in these countries. In addition to the limited number of scientific studies with the 6-month-5-year-old vaccination program, we have determined that the obtaining of current scientific information to the society by academic professionals with high representative power, through news agencies, is another important factor affecting this result.

Parents always want to access health information for their children quickly and accurately [27, 28]. YouTube is a social media platform where both visual and audio narration can be done, and it is used by parents as a frequently referenced source for information obtained [4, 9, 29]. However, some health videos uploaded about pediatric/children may also contain biased and misleading information as well as not having accurate information. Independent individuals who are not healthcare professionals are more vulnerable to such content, as it will be difficult to analyze opposing opinions and obtain information [30, 31]. 80% of the videos in our study had accurate information. We also found the GQ-SC and mDISCERN scores of videos uploaded by academic and medical sources were higher than others (p=0.013, 0.032, respectively). The findings that we found in our study included similar results to the YouTube studies on pediatrics in the literature. In the YouTube video study on peritoneal dialysis in children during the COVID-19 period, it has been shown that they have higher GQ-SC and mDISCERN scores in videos broadcasted by universities and the government [18]. In a study evaluating robotic pyeloplasty videos in children, it was found that GQ-SC and mDISCERN were high in videos uploaded from academic and physician sources [17]. Academic institutes are able to provide accurate information based on scientific resources in better quality on COVID-19 vaccination between the ages of 6 months to 5 years. The fact that the duration time is related to the GQ-SC and mDISCERN score (p=0.001, both) shows us that video time plays an important role in having a good flow of a video that contains correct and sufficient information. During the study, we noticed that the videos uploaded from academic/medical/MD sources and with higher GQ-SC and mDISCERN scores are on the back pages of YouTube. We thought that YouTube's relevant filter sorts the videos with the number of views, likes and comments within the algorithm.

Strengths and Limitations

We have determined that video content and videos related to dose are the most common in video content. We have seen a limited number of videos discussing and informing about the side and long-term effects of COVID-19 vaccines. In addition, another point that attracted our attention was that the families made a lot of comments about long-term and side effects in the comments.

The difficulty of obtaining information on vaccination videos for children aged 6 months to 5 years old on YouTube becomes evident. Second, the absence of studies on long-term effects was another handicap we saw in the videos. There were also comments in the videos stating that there was not enough information about the topics that parents were curious and wanted to learn about, that there were many theories about vaccines and vaccination, and that there were posts and statements that would affect parents who were hesitant about vaccination.

CONCLUSION

In order to ensure that parents and society obtain accurate information, institutions such as universities/governments/MD/academicians who are experts in their fields and approach from a scientific perspective, should be encouraged and programmed to broadcast videos for information on YouTube. Policy makers and related government departments need to use social media platforms more effectively to inform their society accurately. Universities and academic institutions are required to prepare and broadcast videos in with scientific data and results for society and parents. Moreover, the videos should contain information about the long-term and side effects of vaccines, as well as parents' hesitations about the vaccines.

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REFERENCES

1. World Health Organization. WHO COVID–19 dashboard. Available at: https://data.who.int/dashboards/covid19/deaths?n=o. Accessed Dec 24, 2024.

2. Nikolopoulou GB, Maltezou HC. COVID–19 in children: where do we stand? Arch Med Res 2022;53:1–8. [CrossRef]

3. Zimmermann P, Pittet LF, Finn A, Pollard AJ, Curtis N. Should children be vaccinated against COVID–19? Arch Dis Child 2022;107:e1–8. [CrossRef]

4. Yigit M, Ozkaya–Parlakay A, Senel E. Evaluation of COVID–19 vaccine refusal in parents. Pediatr Infect Dis J 2021;40:e134–6. [CrossRef]

5. Demirtas MS, Artunc NY. Mothers' perspectives on childhood vaccination programmes after the COVID–19 pandemic and subsequent news/rumours about vaccination. Turkish J Pediatr Dis 2024;18: 348–54. [CrossRef]

6. Dubé E, Gagnon D, Pelletier C. COVID–19 vaccination in 5–11 years old children: drivers of vaccine hesitancy among parents in Quebec. Hum Vaccin Immunother 2022;18:2028516. [CrossRef]

7. Drouin M, McDaniel BT, Pater J, Toscos T. How parents and their children used social media and technology at the beginning of the COVID–19 pandemic and associations with anxiety. Cyberpsychol Behav Soc Netw 2020;23:727–36. [CrossRef]

8. Zhao X, Basnyat I. Online information and support seeking during COVID–19 lockdown in Wuhan: implications for health promotion. Health Promot Int 2022;37:daac057. [CrossRef]

9. Azak M, Sahin K, Korkmaz N, Yildiz S. YouTube as a source of information about COVID–19 for children: Content quality, reliability, and audience participation analysis. J Pediatr Nurs 2022;62:e32–8. [CrossRef]

10. Demirtas MS, Alici N. The reliability and quality of YouTube videos as a source of breath holding spell. Ital J Pediatr 2024;50:8. [CrossRef]

11. Zengin O, Onder ME. Educational quality of YouTube videos on musculoskeletal ultrasound. Clin Rheumatol 2021;40:4243–51. [CrossRef]

12. Demirtas MS, Alici N. YouTube as a source of information on infantile colic. Pediatr Int 2023;65:e15624. [CrossRef]

13. Dulak NA, Anuszkiewicz K, Trzciński R, Fanciulli G, Stogowski P. YouTube as a patient–information source for hypothyroidism. Minerva Endocrinol (Torino) 2023;48:371–8. [CrossRef]

14. Song S, Park SB, Park K. Thematic analysis of destination images for social media engagement marketing. Indust Manage Data Sys 2020;121:1375–97. [CrossRef]

15. Kocyigit BF, Nacitarhan V, Koca TT, Berk E. YouTube as a source of patient information for ankylosing spondylitis exercises. Clin Rheumatol 2019;38:1747–51. [CrossRef]

16. Tsao SF, Chen H, Tisseverasinghe T, Yang Y, Li L, Butt ZA. What social media told us in the time of COVID–19: a scoping review. Lancet Digit Health 2021;3:e175–94. [CrossRef]

17. Adorisio O, Silveri M, Torino G. Evaluation of educational value of YouTube videos addressing robotic pyeloplasty in children. J Pediatr Urol 2021;17:390.e1–4. [CrossRef]

18. Akyol Onder EN, Ertan P. YouTube as a source of information on COVID–19 and dialysis. Ther Apher Dial 2022;26:1202–1210. [CrossRef]

19. Borusiak P, Langer T, Tibussek D, Becher T, Jenke AC, Cagnoli S, et al. YouTube as a source of information for children with paroxysmal episodes. Klin Padiatr 2013;225:394–7. [CrossRef]

20. Castelló–Martínez A, Tur–Viñes V. Obesity and food–related content aimed at children on YouTube. Clin Obes 2020;10:e12389. [CrossRef]

21. Hernández–García I, Ragozzino S, Giménez–Júlvez T. Characteristics of YouTube videos about the meningococcal B vaccine (4CMenB). Hum Vaccin Immunother 2020;16:2513–7. [CrossRef]

22. Hussein AS, Hamzah SH, Rahman SKASA, Zamri ZA. YouTube™ as a source of information on vitamin D: A content–quality analysis. Dent Med Probl 2022;59:263–70. [CrossRef]

23. Azer SA, Bokhari RA, AlSaleh GS, Alabdulaaly MM, Ateeq KI, Guerrero APS, et al. Experience of parents of children with autism on YouTube: are there educationally useful videos? Inform Health Soc Care 2018;43:219–33. [CrossRef]

24. Nishizaki N, Hirano D, Oishi K, Shimizu T. YouTube videos in Japanese as a source of information on nocturnal enuresis: a content–quality and reliability analysis. Pediatr Int 2022;64:e15049. [CrossRef]

25. Hernández–García I, Porcel CF. Characteristics of YouTube™ videos in Spanish about the vaccine against meningococcus B. Vacunas (English Edition) 2018;19:37–43. [CrossRef]

26. Laforet PE, Basch CH, Tang H. Understanding the content of COVID–19 vaccination and pregnancy videos on YouTube: an analysis of videos published at the start of the vaccine rollout. Hum Vaccin Immunother 2022;18:2066935. [CrossRef]

27. Demirtas MS. The knowledge level of parents in aksaray province about safety precautions in household accidents that can be seen in children aged 1–5. [Article in Turkish]. Aksaray University J Sport Health Res 2022;3:1–12.

28. Demirtas MS, Erdal H. Sources used to obtain information and their impact on the mothers' complementary feeding practices. Ann Clin Anal Med 2021;12:587–91. [CrossRef]

29. Yilmaz H, Aydin MN. YouTube™ video content analysis on space maintainers. J Indian Soc Pedod Prev Dent 2020;38:34–40. [CrossRef]

30. Ashfield S, Donelle L. Parental online information access and childhood vaccination decisions in North America: scoping review. J Med Internet Res 2020;22:e20002. [CrossRef]

31. Tang L, Fujimoto K, Amith MT, Cunningham R, Costantini RA, York F, et al. "Down the rabbit hole" of vaccine misinformation on YouTube: network exposure study. J Med Internet Res 2021;23:e23262. [CrossRef]