

Medical Science

To Cite:

Kubziakowska W, Stelmach J, Rychlik J, Podlejska P, Abramowicz J, Zakrzewski D, Zawadzka M, Mazurkiewicz-Beldzińska M. Internet as a source of knowledge about headaches in children. *Medical Science* 2025; 29: e145ms3596
doi: <https://doi.org/10.54905/diss.v29i162.e145ms3596>

Authors' Affiliation:

¹Department of Developmental Neurology, Medical University of Gdansk, 80-210 Gdansk, Poland

*Corresponding author:

Julia Stelmach, Department of Developmental Neurology, Medical University of Gdansk, 80-210 Gdansk, Poland; Email: jstelmach@gumed.edu.pl

Peer-Review History

Received: 07 June 2025
Reviewed & Revised: 14/June/2025 to 12/August/2025
Accepted: 18 August 2025
Published: 27 August 2025

Peer-review Method

External peer-review was done through double-blind method.

Medical Science

pISSN 2321-7359; eISSN 2321-7367



© The Author(s) 2025. Open Access. This article is licensed under a [Creative Commons Attribution License 4.0 \(CC BY 4.0\)](https://creativecommons.org/licenses/by/4.0/), which permits use, sharing, adaptation, distribution and reproduction in any medium or format, as long as you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons license, and indicate if changes were made. To view a copy of this license, visit <http://creativecommons.org/licenses/by/4.0/>.

Internet as a source of knowledge about headaches in children

Wiktoria Kubziakowska¹, Julia Stelmach^{1*}, Jakub Rychlik¹, Patrycja Podlejska¹, Justyna Abramowicz¹, Dawid Zakrzewski¹, Marta Zawadzka¹, Maria Mazurkiewicz-Beldzińska¹

ABSTRACT

The internet is one of the primary sources of knowledge people rely on for information regarding their health. With a vast number of articles available on various diseases and symptoms, this study aimed to assess the credibility, reliability, and consistency of current medical knowledge of information found on the most accessible websites, including social media, related to headaches in children. We analyzed the first 100 links that appeared when the phrase "headaches in children" was entered into the Google search engine. After applying specific inclusion and exclusion criteria, 89 texts were qualified for evaluation. The analysis was conducted using the DISCERN scale along with a set of author-developed questions to assess the quality of the content. Out of the 89 analyzed sources, 49.3% were found to have a low level of credibility. The average DISCERN score across all materials was 40.93 points. Only six sources were classified as excellent quality. This study highlights the poor quality of online information concerning headaches in children. Most sources are unreliable and lack key clinical content. Healthcare professionals should encourage patients to be cautious when using unverified online sources, and our results suggest that internet sources require significant improvements in accuracy and depth.

Keywords: headache in children, social media, Internet, treatment of headache

1. INTRODUCTION

Headaches are one of the most common neurological problems for children, with a prevalence of nearly 60%. Recurring headaches can harm children's everyday lives as well as their mental health. Parents of children with recurring headaches report that their children have difficulties with emotions, behavior, and concentration more often than parents of children who don't experience headaches (Strine et al., 2006). General quality of children's lives with headaches is also significantly lower than that of their healthy peers (Bruijn et al., 2009).

According to The International Classification of Headache Disorders (ICDH-3 beta), headaches can be divided into three major groups: primary headaches, secondary headaches and neuropathies, facial pains, and other headaches. What is important is that primary headaches are disorders of their own, not caused by any

other medical problems. This group includes such disorders as migraine or tension-type headache. Secondary headaches are symptoms of other disorders, varying from common cold to life-threatening illnesses such as meningitis or tumors of the central nervous system. Problems in the somatosensory nervous system cause neuropathies. Neuropathic pain is relatively rare in children.

The distinction between primary headaches, secondary headaches and neuropathies is crucial to assess what kind of treatment is needed. While secondary headaches are treated by focusing on the primary disorder causing the headache, the treatment of primary headaches primarily aims to relieve the pain. Some mild cases of primary headaches can be approached with lifestyle changes, while others may require the use of analgesics such as paracetamol, ibuprofen, or naproxen (O'Donnell et al., 2021). Although some studies show that triptans may be effective in treating migraine in children (Richer et al., 2016). Whereas in Poland they are not registered for use in the pediatric population. Ergotamine and dihydroergotamine, other drugs used for migraine in adults, are also not recommended for children.

Since many common pain-relieving drugs are available over the counter, some parents give them to their children without consulting a doctor and only seek medical consultation when self-medication proves to be ineffective (Kłoda et al., 2024).

In the last decades the Internet has become an increasingly important source of health-related information in Poland (Bujnowska-Fedak, 2015). Polish people use the Internet for various medical-related purposes, the most common one being searching for information about drugs and their effects (Płaciszewski et al., 2022). Health information found on the Internet affects patients' decisions in multiple ways. Some people make a doctor's appointment after obtaining information from the Internet, but others may cancel their medical appointments or take medications without consultation with their doctors (Bujnowska-Fedak and Węgierek, 2020). We aim to evaluate the credibility of the most popular Google search results as a source of information about the treatment of headaches in children.

2. REVIEW METHODS

2.1. Search Strategy and Data Collection

A set of online texts was used in this study. They all came from the Google search engine (Poland). We collected the first 100 links after entering the phrase "ból głowy u dzieci" (headaches in children in the Polish language). Data collection was performed on April 9, 2024. Texts came from multiple websites (journalistic and informational sites). If the source was a video platform, the video was viewed and treated as a text, which was finally evaluated in the study.

2.2. Inclusion and Exclusion Criteria

There were 100 texts in the mentioned group. The inclusion criteria were mentioned in the first 100 links. The exclusion criteria included paid access, hence excluding seven files. The following exclusion criteria were applied only to doctors and book descriptions on bookstore websites, thereby excluding four files. Our study aimed to evaluate texts that were fully accessible to everyone. A total of 89 files were rated. All exclusion criteria are summarized in Figure 1, which was created using an online tool (Haddaway et al., 2022).

2.3. Scoring system

The collected texts were analyzed in terms of reliability, checked to determine whether they corresponded to current medical knowledge through questions, which were created by authors, concerning types, causes, treatment and symptoms associated with headaches in children. The questions asked by the authors during the analysis concerned the most important issues to understand the topic. They were necessary to verify the accuracy of the text and ensure its alignment with current medical knowledge. Thereafter, the articles were assessed using the DISCERN (Quality Criteria for Consumer Health Information) scale. The DISCERN system is a validated instrument for evaluating the reliability of medical information, created at the University of Oxford, Division of Public Health and Primary Health Care, at the Institute of Health Sciences (DISCERN, 1999). It includes 16 questions about various key treatments contained in the publications. For each question, the text was scored from 1 to 5 points (total sum from 16 to 80), whereas question 16 was a subjective assessment of the assessor of the credibility and reliability of a given text obtained after analyzing all the previous questions. The Discern scale and its general statement are available online. Points 16–29, 30–40, 41–51, 52–63, and 64–80 points indicated "very poor", "poor", "medium", "good", and "very good" levels of reliability, respectively (Tahir et al., 2020).

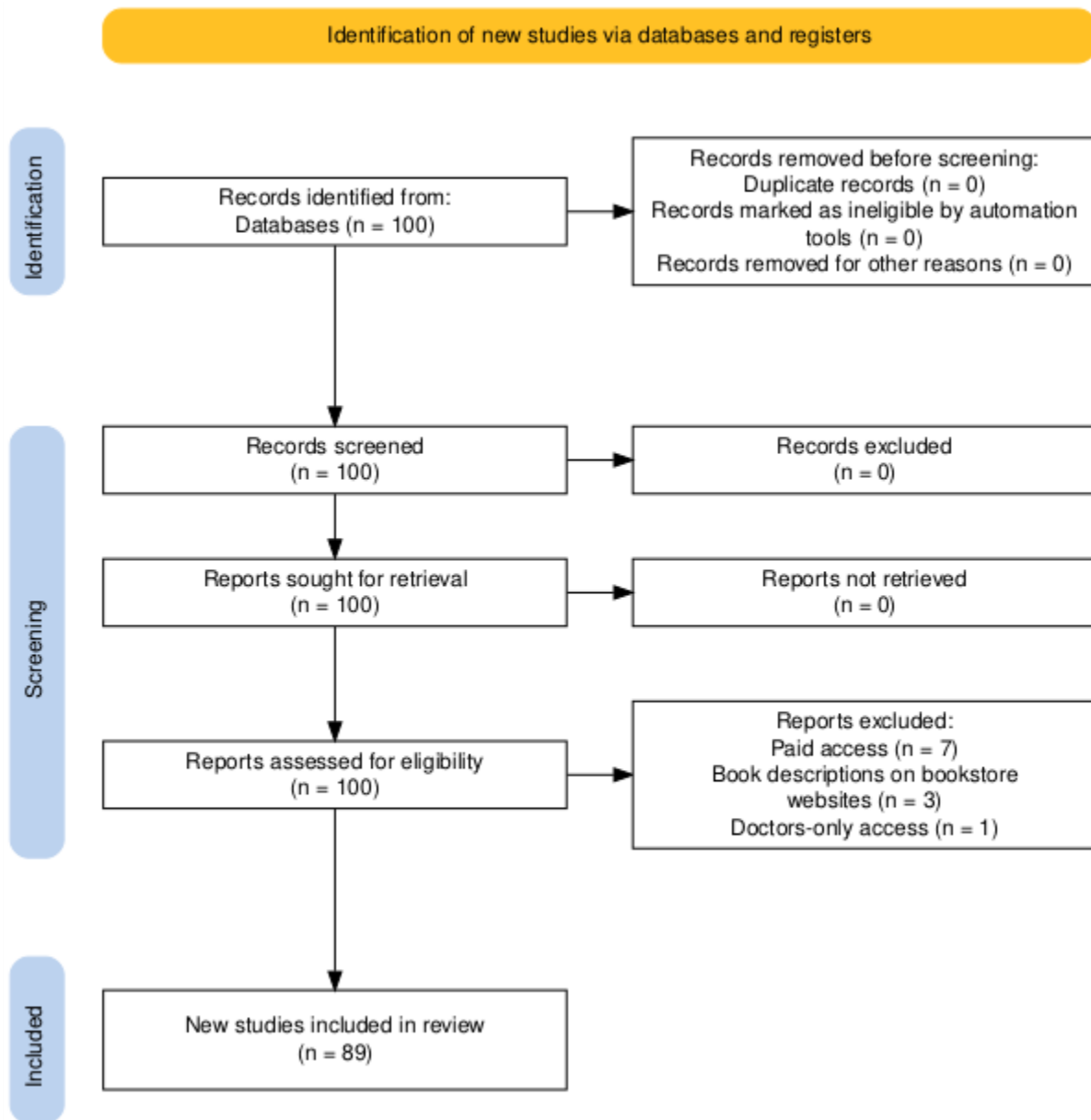


Figure 1. Selection criteria of the study

3. RESULTS

3.1. The Database

After applying the exclusion criteria, 89 out of 100 texts were analyzed. The collected texts came from multiple sources, such as health providers, medical, advertising and informational sites. The most common sources in this study were health provider sites (35.95%). Figure 2 shows the collective counts of all types of sources used in the study.

3.2. Quality Analysis in General

In the final assessment, most of the texts (49.3%) were characterized by a poor level of reliability, gaining 30-40 points (Tahir et al., 2020). The chart differentiating texts into one of the quality categories is shown in Figure 3. The lowest-rated text gained 16 points. Only 6 of the sources were classified as very good quality material; the best-rated text reached 77 points. The average DISCERN score was 40.93 points. Figure 4 represents the mean DISCERN scores for each of the 16 questions. Questions 1 to 3 and question 14 received the highest scores, above 3. These questions respectively ask if the aims are clear, if it achieves its aim, if it is relevant, and if it is clear that

there may be more than one possible treatment choice. Questions Q11 and Q12 had the lowest score of 1.42 each and asked about the consequences of no treatment and how the therapy may affect the quality of life.

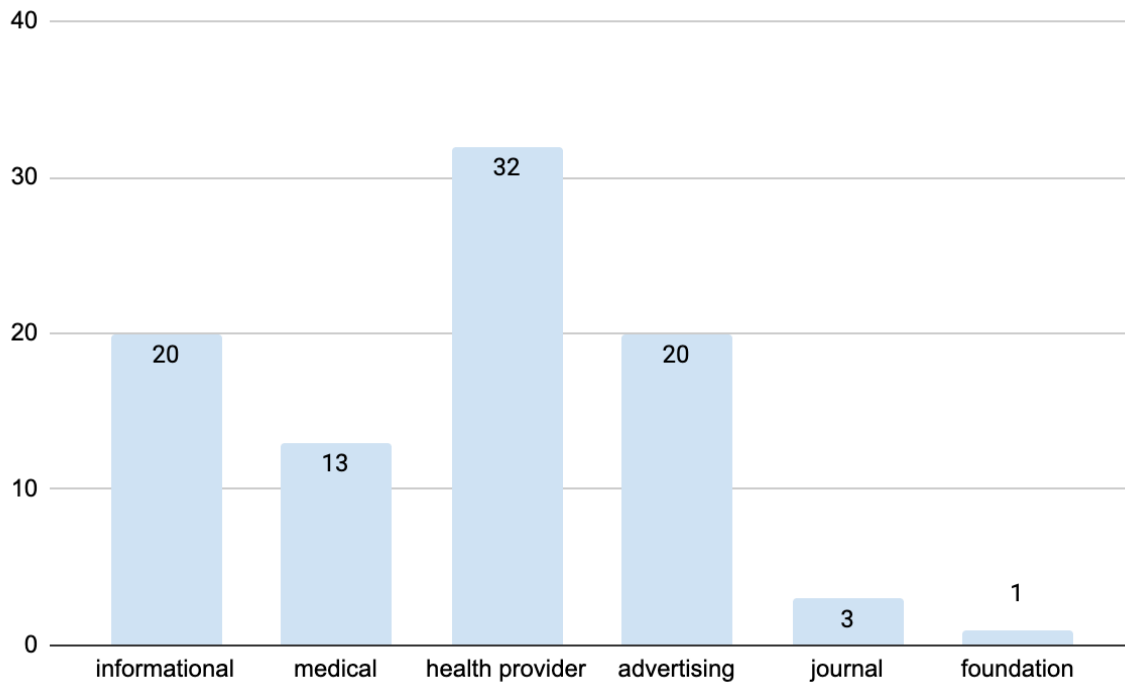


Figure 2. Data sources.

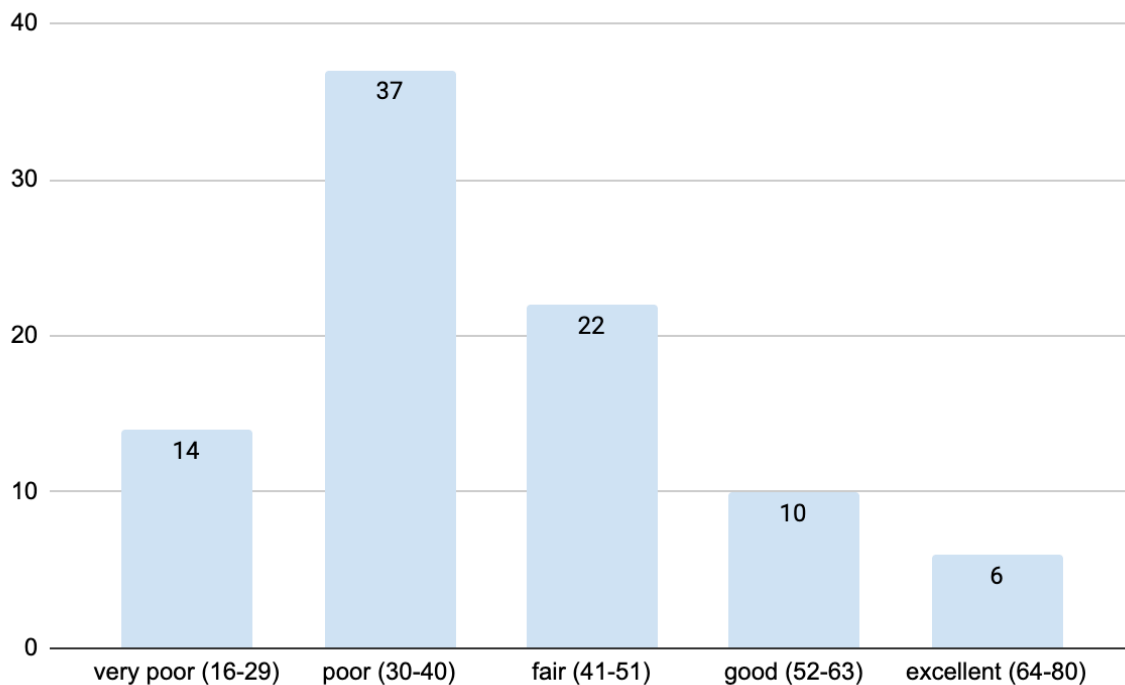


Figure 3. Total DISCERN score.

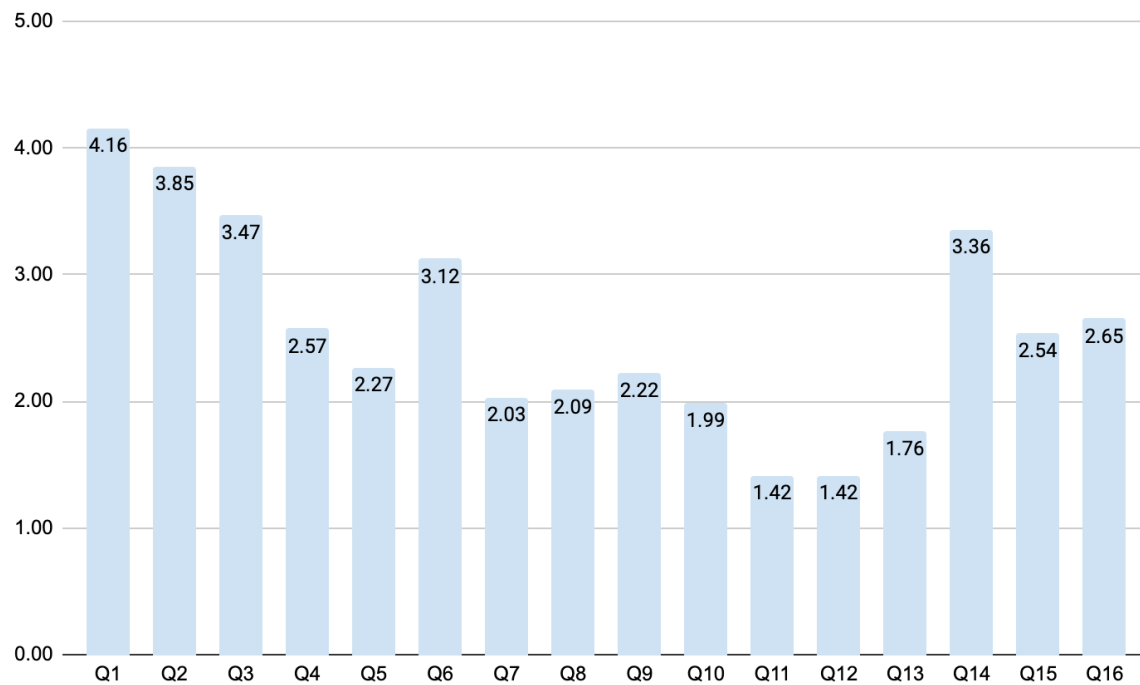


Figure 4. Mean DISCERN score of each question

3.3. Author's Questions Analysis

Although each of the texts included in this study was related to headaches in children, most entries lacked key information regarding the frequency, medication, symptoms indicating headaches, and the kinds of headaches. The questions that missed the most entries concerned how often symptoms precede headaches in children (92.1%), side effects of treatment (83.1%), and the possibility of causal treatment (70.8%). The most information could be found on types of treatment (69.7%), symptoms concurrent with headaches (68.5%) and features of types of headaches (51.7%).

During the analysis of the texts, three open questions were also addressed: the causes, symptoms correlated with headaches, symptoms preceding headaches, and comorbid diseases.

The most frequently pointed out causes of headaches in children are neurological diseases, including migraine (80.8%), tension-type headaches (56.2%), brain tumors (14.6%), and hemorrhage/ischemia in the brain (13.5%), psychogenic pain (52.8%), infection (50.6%), injury (43.8%), medication (30.3%), cardiological diseases (23.6%), and unhealthy lifestyle including sleep deprivation (13.5%), stress (13.5%), dehydration (11.2%) and unhealthy diet (11.2%).

The studied sources most often mentioned the concurrent symptoms with headaches as nausea/vomiting (16.2%), hypersensitivity to stimulus (13.4%), vision deficiencies (7.6%), and impaired balance (6.4%), and others were mentioned less often, like fever, neck stiffness, dizziness and lack of appetite.

The most acknowledged symptoms preceding headaches in examined articles were other vision deficiencies (17.4%), central scotoma (11.2%), paresthesia (10.6%), speech deficiencies (9.3%), and aura (3.1%). However, none of these symptoms were pointed out by more than 30% of the authors of the surveyed texts.

In 71.4% of evaluated sources, creators haven't mentioned any comorbid condition with headache. However, in other texts, the most common indications were depression (7.1%), epilepsy (7.1%), sleep deprivation (5.1%), atopic disease (2.0%), obesity (1.0%) and others (6.1%). The set of questions included in the formula, along with the percentage distribution of responses, is presented in Table 1.

Table 1. Information and statements found in the analyzed material.

	Count	Percentage
Is there information about the frequency of headaches in children?		
Yes	32	36
No	7	7.8
Missing	50	56.2
Is there a breakdown of the types of headaches in children?		
Yes	42	47.2
No	47	52.8
Does the text describe the characteristics of each type of headache?		
Yes	46	51.7
No	43	48.3
Are there effective medications for treating headaches in children?		
Yes	47	52.8
Missing	42	47.2
Do we have different forms of headache treatment?		
Yes	62	69.7
Missing	27	30.3
Are headache medications safe?		
Yes	1	1.1
No	19	21.3
Missing	69	77.6
Is there information about safe dosages of medications for children?		
Yes	17	19.1
No	72	80.9
Is it possible to treat the underlying cause of headaches in children?		
Yes	22	24.7
No	4	4.5
Missing	63	70.8
Do headache medications cause side effects in children?		
Yes	13	14.7
No	2	2.2
Missing	74	83.1

Is there information about symptoms that coexist with headaches?		
Yes	61	68.5
No	28	31.5
Are there symptoms that precede a headache?		
Yes	32	36
No	7	7.8
Missing	50	56.2
How often do children experience symptoms that precede a headache?		
Rarely	7	7.9
Missing	82	92.1

4. DISCUSSION

4.1. The Current Study

As the awareness of potential problems regarding headaches among the youngest society members is growing with the widespread availability of information online. It is of great importance to provide the patients and their families with reliable sources, which may benefit both healthcare professionals and subjects of interest, making the therapy more effective. It turns out that the internet and social media are some of the most vital sources for seeking relief on both medical and social backgrounds of headaches and migraines (Pearson et al., 2019). Therefore, it is essential to analyze the quality of the most common and convenient-to-use sources frequently utilized by patients and relatives concerned with the topic of headaches in infants- online articles found using a Google search engine, one of the most popular sources of medical information (Alduraywish et al., 2020) determining what pieces of advice patients who are seeking for guidance there may confront. The analysis showed that more than half of texts (57.3%) were characterized by a poor and even inferior level of reliability, with an average DISCERN score of 40.89 points, indicating that the patient and relatives were presented with unreliable information about headaches of the children. The less-than-desirable conclusion was a result of a general lack of facts necessary to understand the issue. Moreover, misleading articles commonly were meant to be a form of advertisement, which advised using unscientific methods to combat the problem. The majority of sources were lacking in the most essential facts about the issue of headaches and their therapy in the youngest group of patients, often omitting data about pharmacological and nonpharmacological treatment. Furthermore, texts usually lack fundamental information about the safety of the therapy, side effects, and beneficiary doses, as well as overlook alternatives to the main described cure. It is probable that the majority of these examples are written with the intention to boost the popularity of alternative, often unscientific, methods encouraging the patient's family to adopt them, while not showing the broader picture of the issue.

4.2. Quality of Internet Source in Other Works

In the last few years, the internet articles and video have grown into possibly the most crucial source of intelligence for people to reach for. Thus, it is of great significance to constantly ensure that the content is of passable quality. The current situation seems to have improved due to great efforts undertaken during the COVID-19 pandemic. In this case, the percentage of non-credible websites discussing medical subjects saw a decrease from 57% in 2021 to 24% in 2022 (Chlabicz et al., 2024).

When it comes to the analysis of the quality of online sources about headaches in children, the researchers are unfortunately minimal, thus it is vital to develop this matter and include it in the ongoing debate regarding online content reliability and credibility when it comes to medical issues.

The topic of the quality of the information found on YouTube about headaches and migraine without specifying the age group was previously researched by Saffi et al., (2020). In that study 351 films were analyzed and the results are that the purpose of only 24% of films was education, while 44% presented complementary and alternative medicine, and only 34% of content was created by healthcare professionals. The outcome seems to be comparable to our analysis, alarming that the topic is not free from misinformation.

Furthermore, YouTube seems not to be a perfect solution when it comes to finding medical data for other medical conditions. As it was revealed by Krakowiak et al., (2022), the quality and accuracy of content found on this platform regarding meningiomas is less than satisfactory. A total of 119 videos were studied using DISCERN, JAMA and GQS scales with mean scores of 35.6 points, 2.4 and 1.8 respectively indicating a rather pessimistic perspective regarding the reliability of online content on that matter. What is also crucial, 47.9% of evaluated content belongs to the “poor” grade group, with only 9.24% being considered as “good”. The results seem to correlate with our findings; however, it appears that the quality of information about headaches in children is a bit enhanced, probably due to a different search form and inclusion of professional articles and scientific papers in our publication, which were lacking in the mentioned one. Finally, 35 productions included misleading information which also questions whether that source is a valuable tool for patients and healthcare providers.

A similar analysis was applied by Altunisik et al., (2022) in order to analyze videos available on the YouTube platform regarding multiple sclerosis. After the evaluation of 99 films using DISCERN and GQS scales the results were a bit less concerning with a mean of 43.44 out of 75 and 2.77 out of 5 respectively. While it suggests that the quality is better to some extent in comparison with previously mentioned studies, it is still not satisfactory in the opinion of the authors as it is not certain that the knowledge included in the materials is reliable and scientific and should always be verified with sources of higher confidence, for instance, medical professionals and healthcare providers. Furthermore, a significant part of the materials was limited in information, leading to a narrowed perspective of the disease and a lack of ability to understand the complete picture of the topic fully.

As it was previously mentioned, social media nowadays plays a significant part also when it comes to health guidance. While it is definitely a convenient tool it might be similarly unreliable compared to a consultation with a trained professional. As it was analyzed for the case of spinal muscular atrophy by Tkaczuk et al., (2022), almost half of 112 text included in the study (48.65%) was considered poor when it comes to reliability assessment with an average DISCERN score of 39.66. It is also worth mentioning that the average DISCERN score was 2.18 for a single question, while the lowest can be observed for question no. 11 (Does it describe the risks of each treatment?) (1.43 points) which evaluates the risk of the applied treatment and no.7 (1.73) describing the inclusion of detailed sources of information. The lack of this basic information can lead to a misunderstanding of the topic and a lack of ability to make an informed decision, blurring the complete picture. While a small percentage of included sources can be considered excellent aids, it may be difficult for an untrained patient to differentiate between them and opt for those of higher quality. When it comes to the reliability of the information, the lack of certainty seems to be an excellent barrier to trust, making it not suitable to be a first choice for seeking help.

It is worth adding that narrowing the search to prompts about specific therapy does not necessarily correlate with results of higher quality. As it was investigated by Frattaroli et al., (2022) the most common websites- the ones which are most likely to be chosen by the patients and their relatives are far from satisfactory quality when it comes to surgical therapies for migraine. While the results of the EQIP analysis were relatively high (22 out of 36 on average), a substantial absence of crucial information was observed. A significant number of text was highlighted as inadequate when it comes to readability, which is one of the basic amenities essential for an article aimed at nonprofessionals. This deficiency may lead to confusion of facts, deteriorating the general understanding of the topic, and may contribute to discouraging patients from seeking help. This factor is one of the most vital for correctly applying the knowledge included in the articles and should be verified every time before the publication of medical information to provide patients and their relatives with clear, easy-to-understand facts, to ensure accurate perception and adequate utilization.

To further enrich the discussion about the readability of online medical texts, it is beneficial to analyze the results of the research of Russo et al., (2020). The paper aimed to investigate the top 10 patient-oriented websites to verify the level of formal information required to understand the included data fully. The outcomes respectively for the keywords “headache” and “migraine” were on average grade level 12.4 and 10.8, and as for the years of formal education- 13.3 and 12.5 years. Furthermore, all the most frequently used websites are not fulfilling the USA National Institutes of Health guidelines, which advocate a grade level of readability between 6 and 7. It suggests that, despite being widely available to everyone, the complex nature of the texts prevents the articles from being a helpful aid for the majority of patients. Moreover, the unmet need to access accurate, pertinent and easy-to-apply information and content quality seems to increase the neglect of this disease further, leading to a significant problem for the healthcare system.

All of the analyzed papers suggest that the quality of medical information available online should be constantly monitored, and it is of great importance to ensure that the sources patients and their families use are of sufficient legibility and thoroughness when it comes to vital facts. While the World Wide Web might be a valuable tool due to its convenience, the materials found during the research are mostly unacceptable. They cannot contribute positively to the treatment process.

4.3. Advantages and Limitations

One of the basic and most vital limitations of this kind of study is the great agility in the development of the internet and the hecticness of the variety of emerging websites with information regarding headaches, especially in the youngest age group. It is of great difficulty, if not impossible, to include every piece of data that can be found via search engines, even in a relatively short period. Moreover, this paper only presents Polish materials and assesses their quality, lacking information about similar topics in other languages and searching by different keywords.

The great majority of content in this study encompassed only basic and fragmentary data, leading to a greatly restricted knowledge base presented to the recipient. Nevertheless, the topic of headaches, especially in pediatric scenarios, is immeasurably complex and vast, and cannot be shortened to the form of an article often prepared by publicists without sufficient preparation and lacking knowledge and research.

The questions provided in this research, in accordance with its authors, covered a broad scope of the issue of headaches in children. However, it is worth pointing out that they are not validated.

Additionally, it is crucial to consider that there were also prompts only a few sentences long, making it challenging to make an objective and accurate assessment using the DISCERN scale. Moreover, several articles were sponsored by various clinics, pharmacies and manufacturers of products designed to reduce the symptoms of headaches, making them prone to be subjective and even giving the impression of being an advertisement in a form mimicking the proper scientific article leading to misinformation instead of educating patients and their relatives.

It is worth pointing out that undoubtedly the advantage of this study is the inclusion of a great variety of social media sources including Pinterest, YouTube, Facebook and many more. As the texts came from different types of databases the final result is more reliable.

4.4. Future Direction

Even considering the natural limitations of this study, the possible directions for future publications on the topic of reliability of medical knowledge in ubiquitous sources may be of great importance in order to enhance their quality.

In this research, the analyzed texts were only in the Polish language and only regarding the topic of headaches in a restricted age group. Therefore, it may be beneficial to broaden the range of research in this field. The knowledge about the quality of available materials can be easily expanded if the keywords were in other languages.

Therefore, there are probably discrepancies between texts about for instance the patient experience, commercial articles and scientific papers. Therefore, in the future, it might be worth analyzing those divergences by taking into consideration the character and source of information to correlate their reliability and general quality.

The poor results presented in this paper ensure the value of the analysis of ubiquitous information available to the general audience on the Internet. Moreover, it is of great importance to assess the variety of other diseases apart from headaches to compare the quality of online data and what is crucial —the trustworthiness of the knowledge reaching patients while they conduct research on their own.

5. CONCLUSION

Headaches in children are a significant concern, affecting not only the young patients but also their caretakers, who want to relieve the children's ailments by any means. Our study evaluates the quality of Internet information about headaches in children. The average score on the DISCERN scale was 40.89, indicating that the quality of Internet information is poor and exhibits certain shortcomings, especially with the inclusion of additional sources of support and information, the benefits and risks of each treatment, the impact of the treatment choices on quality of life and the consequences of forgoing treatment. It is also noteworthy that our results demonstrate the Internet is a beneficial source of information on the causes of headaches in children, associated symptoms and various methods of treatment. However, there is a lack of detailed information regarding drug safety, safe dosages or causal treatment. The results of this study are crucial because they relate to easily accessible information for everyone. Therefore, the shortage of details about the risks and safety of treatment should be of particular concern, as it may lead to dangerous attempts at self-treatment. We strongly believe that our work addresses the issue of the quality of information available on the Internet and its lack of crucial details. In conclusion, this study highlights the necessity to warn patients about using unverified online information, particularly if it relates to children's health and direct them to reliable sources. Likewise, the patients should be made aware that Internet materials do not replace consultations with specialists. It may be valuable to replicate this study to assess the future accuracy of online information.

Acknowledgments

The authors have no acknowledgments to disclose.

Author's contribution:

Wiktoria Kubziakowska : Conceptualization, Investigation, Data Curation, Writing - original draft

Julia Stelmach : Methodology, Formal Analysis, Investigation, Writing - Original Draft

Jakub Rychlik : Formal Analysis, Investigation, Writing - Original Draft

Patrycja Podlejska : Investigation, Resources, Writing - Original Draft,

Justyna Abramowicz : Investigation, Resources, Writing - Original Draft,

Dawid Zakrzewski : Investigation, Writing - Review & Editing, Supervision

Marta Zawadzka : Conceptualization, Writing - Review & Editing, Supervision

Maria Mazurkiewicz-Beldzińska : Writing - Review & Editing, Supervision

Informed consent

Not applicable.

Ethical approval

Not applicable.

Funding

This study has not received any external funding.

Conflict of interest

The authors declare that there is no conflict of interest.

Data and materials availability

All data associated with this work are present in the paper.

REFERENCES

1. Alduraywish SA, Altamimi LA, Aldhuwayhi RA, AlZamil LR, Alzeghayer LY, Alsaleh FS, Aldakheel FM, Tharkar S. Sources of Health Information and Their Impacts on Medical Knowledge Perception Among the Saudi Arabian Population: Cross-Sectional Study. *J Med Internet Res* 2020;22(3):e14414. doi: 10.2196/14414.
2. Altunisik E, Firat YE, Kiyak Keceli Y. Content and quality analysis of videos about multiple sclerosis on social media: The case of YouTube. *Mult Scler Relat Disord* 2022;65:104024. doi: 10.1016/j.msard.2022.104024.
3. Bruijn J, Arts W-F, Duivenvoorden H, Dijkstra N, Raat H, Passchier J. Quality of Life in Children with Primary Headache in a General Hospital. *Cephalgia*. 2009;29(6):624-630. doi: 10.1111/j.1468-2982.2008.01774.x
4. Bujnowska-Fedak MM, Węgierek P. The Impact of Online Health Information on Patient Health Behaviours and Making Decisions Concerning Health. *Int J Environ Res Public Health* 2020; 17(3):880. doi: 10.3390/ijerph17030880
5. Bujnowska-Fedak MM. Trends in the use of the Internet for health purposes in Poland. *BMC Public Health* 2015;15:194. doi: 10.1186/s12889-015-1473-3.
6. Chlabicz M, Nabozny A, Koszelew J, Łaguna W, Szpakowicz A, Sowa P, Budny W, Guziejko K, Róg-Makal M, Pancewicz S, Kondrusik M, Czupryna P, Cudowska B, Lebensztejn D, Moniuszko-Malinowska A, Wierzbicki A, Kamiński KA. Medical Misinformation in Polish on the World Wide Web During the COVID-19 Pandemic Period: Infodemiology Study. *J Med Internet Res* 2024;26:e48130. doi: 10.2196/48130.
7. DISCERN—The DISCERN Instrument. 1999. http://www.discern.org.uk/discern_instrument.php
8. Frattaroli JM, Lo Torto F, Turriziani G, Bruno E, Marcasciano M, Ribuffo D. Quality of online information about migraine headache surgery. *J Plast Reconstr Aesthet Surg* 2022; 75(9):3603-3607. doi: 10.1016/j.bjps.2022.06.001.
9. Haddaway NR, Page MJ, Pritchard CC, McGuinness LA. PRISMA2020: An R package and Shiny app for producing PRISMA 2020-compliant flow diagrams, with interactivity for

- optimised digital transparency and Open Synthesis. *Campbell Syst Rev* 2022;18(2):e1230. doi: 10.1002/cl2.1230
10. Kłoda K, Babicki M, Biesiada A, Gałązka-Sobotka M, Kowalska-Bobko I, Mastalerz-Migas A. Self-medication of adults and children in Poland - results from outpatient health care physicians online questionnaire. *Front Pharmacol* 2024;15:1413811. doi: 10.3389/fphar.2024.1413811.
11. Krakowiak M, Fercho J, Piwowska K, Yuser R, Szmuda T, Słoniewski P. YouTube as a Source of Patient Information for Meningiomas: A Content Quality and Audience Engagement Analysis. *Healthcare (Basel)* 2022;10(3):506. doi: 10.3390/healthcare10030506.
12. O'Donnell DM, Agin A. Management of headaches in children and adolescents. *Curr Probl Pediatr Adolesc Health Care*. 2021;51(7):101034. doi: 10.1016/j.cppeds.2021.101034.
13. Pearson C, Swindale R, Keighley P, McKinlay AR, Ridsdale L. Not Just a Headache: Qualitative Study About Web-Based Self-Presentation and Social Media Use by People With Migraine. *J Med Internet Res* 2019;21(6):e10479. doi: 10.2196/10479.
14. Płaciszewski K, Wierzba W, Ostrowski J, Pinkas J, Jankowski M. Use of the Internet for Health Purposes-A National Web-Based Cross-Sectional Survey among Adults in Poland. *Int J Environ Res Public Health* 2022;19(23):16315. doi: 10.3390/ijerph192316315.
15. Richer L, Billinghamurst L, Linsdell MA, Russell K, Vandermeer B, Crumley ET, Durec T, Klassen TP, Hartling L. Drugs for the acute treatment of migraine in children and adolescents. *Cochrane Database Syst Rev* 2016;4(4):CD005220. doi: 10.1002/14651858.CD005220.pub2.
16. Russo A, Lavorgna L, Silvestro M, Abbadessa G, Bisecco A, Trojsi F, Tessitore A, Tedeschi G, Bonavita S. Readability Analysis of Online Headache and Migraine Information. *Headache* 2020;60(7):1317-1324. doi: 10.1111/head.13818.
17. Saffi H, Do TP, Hansen JM, Dodick DW, Ashina M. The migraine landscape on YouTube: A review of YouTube as a source of information on migraine. *Cephalalgia*. 2020;40(12):1363-1369. doi: 10.1177/0333102420943891.
18. Strine TW, Okoro CA, McGuire LC, Balluz LS. The associations among childhood headaches, emotional and behavioral difficulties, and health care use. *Pediatrics* 2006;117(5):1728-35. doi: 10.1542/peds.2005-1024.
19. Tahir M, Usman M, Muhammad F, Rehman Su, Khan I, Idrees M, Irfan M, Glowacz A. Evaluation of Quality and Readability of Online Health Information on High Blood Pressure Using DISCERN and Flesch-Kincaid Tools. *Appl Sci* 2020; 10(9):3214. doi: 10.3390/app10093214
20. Tkaczuk M, Zakrzewski DM, Król M, Zawadzka M, Waszak PM, Mazurkiewicz-Beldzińska M. Social Media as a Source of Knowledge about Gene Therapy for Spinal Muscular Atrophy. *Healthcare (Basel)* 2022;10(12):2445. doi: 10.3390/healthcare10122445.