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DOUBLE ROLE OF HEALTH INFORMATION ON THE INTERNET: MMS AND THE TREATMENT OF AUTISM

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ABSTRACT

Despite the role it can play in empowerment and in various patient support activities, there is ample evidence that points to problems in the quality of health information available on the internet. This work analyzed the quality of information about the use of Miracle Mineral Solution (MMS) in the treatment of autism on websites in Portuguese, hosted in Brazil. A total of 121 sites were analyzed considering technical aspects, interactivity, readability and accuracy. The results showed that the majority (76%) did not indicate the use of MMS. Blogs were the sites that most indicated the use of the product. It is noteworthy that the sites that indicate the use of the product have been well evaluated in terms of interactivity and readability, but with a very poor result in the accuracy of the information conveyed. If, on one hand, there is a low quality of the information conveyed about the use of MMS for the treatment of autism, there is also an intensification of publications that contraindicate the use of this product after the publication of matter in a mass communication vehicle, which points to the feasibility and importance of the dissemination of good quality health information on the internet.

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INTRODUCTION

The popularization of the internet has also expanded its role in the search for health information (Scott et al., 2017; Din et al., 2019; Kyriacou and Sherratt, 2019; Bach and Wenz, 2020). Heaton et al. (2017) identified that truck drivers used the internet to search for health information, on average, twice a week. Scott et al. (2017), interviewing adults and elderly people cared for in an emergency unit, confirmed the use of the internet to search for health information by 81.3% of the 889 patients interviewed, being more frequent among the younger ones. Internet access was observed in 74.9% of Brazilian households, with cell phones being the main equipment used to access the network (IBGE, 2018). The use of the internet was mentioned by 91% of young people aged between 20 and 24 years old, with the sending or receiving of text, voice, or image messages by applications other than e-mail being the use mentioned by 95.7% of respondents (IBGE, 2018). Bianchini et al. (2018) observed a similar profile of internet access among physiotherapy students from a higher education institution in southern Brazil. Din et al. (2019) identified the use of the internet as related to health issues by the majority (53.1%) of the more than 40,000 users interviewed by a survey on health in California. Bach and Wenz (2020) observed a similar profile when analyzing a database on 4 months of web access and mobile device usage in Germany. Kyriacou and Sherratt (2019), studying the behavior of patients seen by endocrinologists, observed that the majority (56.1%) sought information on the internet and that 77.1% of these patients considered the information highly reliable, although many (59) .4%) are unaware of information certification tools on the internet. It is noteworthy that only 25.7% of those who sought information on the Internet discussed it with their endocrinologists. However, the health information available on the internet is a subject of intense discussion. While the role of good quality information in patient empowerment and support activities is indisputable (Pagoto et al., 2019; Timmers et al., 2020), there is also evidence pointing to problems in the quality of this information (Zhao and Zhang, 2017; Bach and Wenz, 2020; Passos et al., 2020; Ramos et al., 2020). Often, the information made available lacks scientific rigor, since anyone can add content to the sites, without any type of evaluation of its correctness. Hérnandez-Garcia and Giménez-Julvéz (2020), analyzing 80 sites with information on measures to prevent contamination by COVID-19, observed low adherence of the information made available to the recommendations of the World Health Organization. Schuster et al. (2020) observed that Facebook

proves to be a relevant source of information for patients with psoriasis, but the quality of information provided needs improvement. Alakhali (2020) observed low quality of information from websites that provided information on oral cancer in Arabic. A similar situation was observed by Passos et al. (2020) when analyzing the quality of information about oral cancer on the internet in Portuguese. The authors concluded that there is low quality both in the information made available on social networks and websites.

MMS is a solution obtained by mixing two solutions: the first of 28% sodium chlorite and the second, called activator, an acidic solution that can be citric, hydrochloric, acetic, among others (Brasil, 2018). According to Loh and Shafi (2014), it is also suggested to use a sodium chlorite solution with an acidic juice, such as lemon, for example. The mixture of the two solutions forms chlorine dioxide, which is highly irritating to the eyes and respiratory tract, can cause vomiting, anuria and acute kidney failure, if ingested, and lead to hypoxia and acute lung injury if inhaled (ABRACIT, 2020). The action of this product is suggested for in the treatment of several diseases, including autism spectrum disorder (ASD). ASD is a neurological development disorder characterized by difficulty in social communication and restricted and repetitive patterns of behavior, interest, or activities (Sanchack and Thomas, 2016; Mukherjee, 2017). It is estimated to affect around 1% of the world's population (Dias et al., 2017). Its treatment is mainly non-pharmacological, based on behavior modification strategies, offering resources and alternatives to expand social ties, circulation possibilities and ways of being in each individual's life. (BRAZIL, 2015). Medications are indicated only to reduce specific symptoms that are refractory to behavioral interventions. Although there is no cure, it is possible to significantly improve the quality of life through timely and appropriate interventions (Brasil, 2015; Mukherjee, 2017). ASD is one of the situations for which the use of the product known as MMS (Mineral Miracle Solution) has been promoted, as a miracle cure. It is noteworthy that there is no evidence to support the use of this product as medicine and several regulatory agencies have issued warnings about the risks of its use and banned its sale (Loh and Shafi, 2014, Newscap, 2019), including ANVISA (Brazil, 2018; Brazil, 2019). In this context, this work is a case study centered on information available on internet sites, in Portuguese, about the use of the Mineral Miracle Solution (MMS) product in the treatment of ASD, aiming to support the discussion about the potentialities and risks of information in health on the internet.

METHODOLOGY

Sites selection: The search of the sites to be analyzed was carried out using the platforms Google, Bing and Yahoo, three of the main ones used in Brazil, through the terms: MMS; MMS AUTISM; MMS MINERAL MIRACLE SOLUTION and MMS HEALTH. The first 50 sites were retrieved by searching for each term in each platform, whose URL (uniform resource locators) were exported to a Google Sheets spreadsheet for further analysis. It is noteworthy that all searches were performed in the same period of time and an anonymous window. Initially, links with repeated URLs were excluded, and then the following exclusion criteria were applied: sites without text, private to subscribers, an online petition for prohibition/liberation of the use of MMS in Brazil, that were not hosted in Brazil or to files in the PDF extension or social media.

Data collection and analysis: Descriptive data regarding the type of site, date of publication and indication of how to carry out the acquisition of the MMS were registered in a spreadsheet. To analyze the content of the site, an adaptation of the methodology proposed by Paolucci et al. (2017) was used (Table 1). Questions considered not applicable were not used for scoring. The analysis of each aspect was carried out by two evaluators independently. The Kappa index was used to assess the degree of agreement between the two evaluators of each site. The sites' content was rated very poor when they received scores of up to 25% of the overall possible score; bad when the score was between 26% to 50%; regular between 51% and 75% and good from 76% to 100%. This ranking was done both for each analysis category and the overall score of the site. Considering the lack of scientific evidence to support the indication of MMS for the treatment or cure of autism, the mention of these two situations was considered a lack of accuracy of the information. On the other hand, the lack of information about side effects, widely supported by the literature, was also considered a negative aspect of the information. Data were analyzed by descriptive statistics tools using a Microsoft Excel spreadsheet. The Kruskal-Wallis statistical test was applied to compare the ranking of sites concerning the date of publication and whether or not to use MMS for autism. The time frame considered was an article published in the "Fantástico" program on the subject, where risk situations related to health technology were presented. The purpose of this comparison was to assess whether a report on national television with a large audience warning about the risks of using this product could change the quality profile of the information made available on the internet. Thus, 3 groups were considered: published before, published after the article aired by the "Fantástico" program and with no date available.

RESULTS

The search with the keywords resulted in 471 URLs that, after excluding the repeated sites between search engines and platforms, resulted in 149 sites. Then, 28 sites were excluded by applying the exclusion criteria outlined (Figure 1). Among the most frequent types of websites, varieties (34.7%), blogs (30.6%), newspaper pages (15.7%), health advice pages (5.0%), pages were observed. of printed magazines (3.3%) and political pages (3.3%). Table 2 presents the overall average for each of the 4 most frequent types of websites, as well as for each category of analysis.

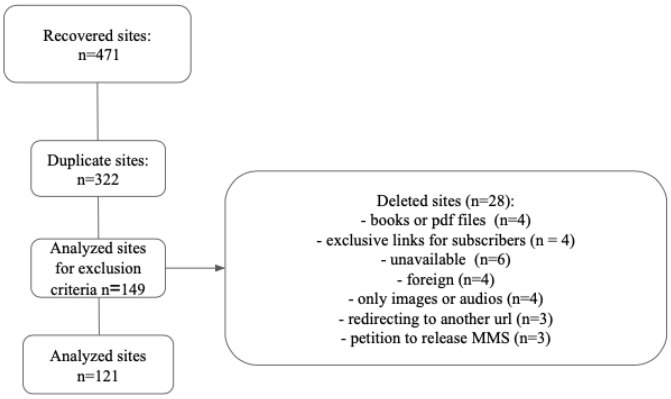

Figure 1. Flowchart for incorporating sites into the study

The overall score attributed between the 4 types of websites showed a statistically significant difference (p=0.007). Most journalistic pages were published after the TV report and only one website indicated the use of MMS. Most variety sites had a contraindication for using MMS (81%) and were published (52.4%) after the TV report. The health advice websites were all against using MMS. Blogs, on the contrary, were mostly before the report (54.0%), many had no publication date (35.1%) and 48.6% were in favor of using MMS as a treatment for autism. Table 3 presents the results found in the analysis of website content. Among the 121 sites analyzed, the majority (76%) did not indicate the use of MMS, and 58.3% of them were published after the TV report. However, most pages that did not have a date indicated the use of MMS (58.6%). Among the sites that indicated the use of MMS, none were considered of good quality, 7 were considered fair and 19, poor. Among those who did not indicate the use of the product, most were considered regular (60) or of good quality (29). About 39% of the sites were classified as good quality in the technical aspects analysis category, 56.2% in the interactivity category and 29.76% in the readability category. Considering all aspects, only 16.6% of the sites were considered of good quality. It is noteworthy that no site was considered of good quality in the accuracy category.

Table 1. Criteria used to assess the content of websites (Adapted from Paolucci et al., 2017)

TECHNICAL ASPECTS	10 PTS	0 PTS
Is there information about the person in charge of the institution?	Yes	No
How long ago was the last UPDATE done?	Yes	No
Does the site have any commercial advertisements?	No	Yes
Is there a source of information about AUTISM?	Yes	No
Is there a source of information for TREATMENT with MMS?	Yes	No
Is there a source of information on the adverse effects of MMS?	Yes	No
TOTAL TECHNICAL:	max. 60 points	
INTERACTIVITY		
Is there a COMMUNICATION CHANNEL for contact?	Yes	No
Participate in any SOCIAL NETWORK?	Yes	No
Is there a search tool, research tool?	Yes	No
Is there a main MENU?	Yes	No
Is the FIRST PAGE of the site ATTRACTIVE?	Yes	No
TOTAL INTERACTIVITY	max 50 points	
ACCURACY		
Do you point to the use of MMS for some treatment?	No	Yes
Do you teach how to make MMS or indicate where to buy it?	No	Yes
Talk about the side effects of using MMS?	Yes	No
Does it present proper concepts about autism?	Yes	No
TOTAL ACCURACY	max 40 points	
READABILITY		
Did you have difficulty understanding information about AUTISM?	No	Yes
Did you find WORDS you didn't know on the AUTISM page?	No	Yes
Are there PICTURES on the AUTISM page?	Yes	No
Do PICTURES on the AUTISM page help you understand the text?	Yes	No
Did you have difficulty understanding MMS TREATMENT information?	No	Yes
Did you find WORDS you didn't know on the TREATMENT page?	No	Yes
Is there a TREATMENT page?	Yes	No
Do the PICTURES on the TREATMENT page help to understand the text?	Yes	No
TOTAL READABILITY	max 80 points	
TOTAL	230	

Table 2. Analysis of sites according to analysis criteria and type, N=121, Brazil, 2019

Analysis criteria/ Type of site	TECHNICAL			INTERACTIVITY			ACCURACY			READABILITY			TOTAL		
	Average (Max-Min)	Mode	SD	Average (Max-Min)	Mode	SD	Average (Max-Min)	Mode	SD	Average (Max-Min)	Mode	SD	Average (Max-Min)	Mode	SD
Newspaper site (n=19)	50 (60-20)	50	11,7	40 (50-0)	40	13	30 (30-10)	30	7	40 (50-20)	40	11,2	140 (180-90)	140	26,7
Blog (n=37)	30 (60-10)	30	14,2	30 (50-10)	20	15,4	20 (30-0)	30	11,9	40 (60-10)	40	11,6	110 (180-140)	130	36,5
Variety sites (n=42)	40 (60-10)	40	14,2	40 (50-10)	40	11,1	20 (30-0)	30	10,1	30 (60-20)	20	15	125 (190-70)	180	38,4
Health Council sites (n=6)	45 (50-20)	50	14,7	25 (50-20)	20	12,6	20 (20-10)	20	5,1	20 (-)	20	0	110 (120-90)	110	12,2

SD: Standard Deviation

Table 3. Classification of sites that recommend or not the use of MMS to treat autism according to analysis category, N=121. Brazil, 2019

Sites that advocate the use of MMS for the treatment of autism (N=29)					
Analysis criteria/Classification	Technical	Interactivity	Accuracy	Readability	Total
Very Poor	7	7	27	0	3
Bad	18	5	2	8	19
Regular	2	7	0	18	7
Good	2	10	0	3	0
Total	29	29	29	29	29
Sites that did not advocate the use of MMS for the treatment of autism (N=92)					
Analysis category /Classification	Technical	Interactivity	Accuracy	Readability	Total
Very Poor	1	5	3	0	0
Bad	14	16	40	1	3
Regular	32	13	49	58	60
Good	45	58	0	33	29
Total	92	92	92	92	92

Table 4. Evaluation of the content of websites published before or after the TV report or without date, N=121, 2019

Analysis criteria	Technical				Interactivity				Accuracy				Readability				Total			
Classification	VP	B	R	G	VP	B	R	G	VP	B	R	G	VP	B	R	G	VP	B	R	G
Before (n=43)	1	15	11	16	7	7	3	26	10	18	15	0	0	1	25	17	0	6	27	10
After (n=51)	0	6	18	27	1	10	7	33	3	21	27	0	0	1	37	13	0	2	32	17
No date (n=27)	7	11	5	4	4	4	10	9	17	3	7	0	0	7	14	6	3	14	8	2
Total (n=121)	8	32	34	47	12	21	20	68	30	42	49	0	0	9	76	36	3	22	67	29

G= Good. R= Regular. B= Bad. VP= Very Poor.
Before= before the TV report. After= after the TV report.

Table 5. Selected excerpts from sites that suggested the use of MMS. Rio de Janeiro, 2019

"...Of course, each new discovery has skeptics and critics. (...). Don't forget that many people are involved in the great economic benefit, which means a lifelong chronic illness. The fiercest critics are usually the ones who have made the most money from such treatments and therefore their behavior against me is natural."
"...Don't damage the relationship with your doctor by asking or even saying that you are using MMS for cancer or any other disease. There are severe penalties for doctors who promote therapies that are not yet approved. (...). If you choose to experiment privately with the option described in this article, be careful about how you expose the results..."
"...Incredibly, all who seriously study MMS (Chlorine Dioxide) categorically claim that doctors are victims as much as we are of these large corporations. Unfortunately, they are systematically used as tools so they can sell so much. Virtually none of them have access to the information on Chlorine Dioxide..."
"Don't try or want to educate your doctor. You need to maintain a valid working relationship with the doctor(s) and professionals because in the future they could save your life..."
"...if you are considering taking MMS by asking your doctor for information to see if he or she will approve and bless you for your use, then you probably haven't understood why or how this works..."
"…Know how the richest families on the planet maintain their perfect health and at a very low cost… And another question: Why doesn't science study this or these factors that make them so healthy? This is the mistake of all of us. Science has studied and knows it very well, since the beginning of the 1940s, but it does not divulge it, much less put it into practice through medicine. We must understand that we would no longer need to use any kind of chemical treatment to keep us healthy for life. This would bring the industries an absurd loss... As Chlorine Dioxide cannot be patented, as it is a natural molecule, they would have absolutely nothing to profit from it..."
"…There is no news that anyone in the British imperial family has ever postponed an appointment because of having a simple cold or a cough…No one in the palace gets sick. Well, it is known that since 1942 that the entire British imperial family has been using a mixture of sodium chlorite with an acid to keep them so healthy, because that is how Chlorine Dioxide is supplied to the body. And in this way the greatest bankers in the world, the greatest businessmen in the world and their families also do..."
"In each case, they do a lot of damage when people believe them and walk away thinking that MMS doesn't work. This means that many people miss the chance to overcome suffering (and possible death), or in the case of autism, they miss the chance to get their children back..."
"Anyone can be overloaded with toxins… If your health isn't perfect… you're generally lacking in energy, if you have trouble losing weight, your blood pressure is constantly changing, or you're dealing with constant inflammation or pain, then there is a high possibility of involvement of a toxin, heavy metal, virus, bacteria or parasite. When MMS is ingested, it produces and distributes chlorine dioxide to red blood cells, making it the most potent killer of pathogenic organisms known in nature..."
"The application of the pest control protocol has been successful in all cases improving the health of affected children. He has been able to reach, in three years to date, the full recovery of 178 autistic children, with name, photo and history of their illness..."
"...MMS cures cancer, AIDS, autism... MMS, the universal medicine has the potential to close all pharmacies, but it has a strong taste…"

(excerpts taken in full from the consulted publications)

Among those who indicated the use of MMS, 93.1% had its accuracy classified as very poor, while among those who did not indicate the use of the product, the majority (53.2%) were classified as regular in this regard. The comparison of scores obtained by sites that indicated or not the use of the MSS showed a statistically significant difference in the categories of analysis technical aspect (p=0.0001), accuracy (p=0.0001), readability (p=0.01251) and in the general classification (p=0.0001). The analysis of the websites concerning the date of publication (Table 4) showed that most were published after the report broadcast on TV (42.1%) and considered regular (47.8%). Comparison of scores for each category of analysis of sites published before or after the publication of the report on TV and those without a date showed statistically significant differences between the overall scores of the sites before and after the report (p=0.00366), and between the undated sites and after the report (p=002911), suggesting an improvement in the information broadcast from the TV report. The analysis of the narrative of the sites allowed us to identify some worrying aspects. The first is the distrust and feeling of impotence towards the medical profession, the pharmaceutical industry and the health authorities instilled in several messages. As exemplified by the excerpts in Table 5, extracted in full from the pages consulted, these three actors would be contrary to the well-being of the population and would serve economic interests. Some posts even suggest that information about product use should not be shared with your doctor or other health care professional. Others justify the position of these professionals against the use of the product due to pressure from professional bodies or a process of lack of access to information, possibly orchestrated by the pharmaceutical industries.

Table 6. Excerpts claiming safety in the use of the MMS product, Rio de Janeiro, 2019

"...By the way, if you are totally healthy and have nothing in your body with an acid level below 7, there will be no negative effects from using chlorine dioxide..."
"...Normal levels of oxygen in the blood cannot destroy all the pathogenic cells present in disease conditions, but the application of chlorine dioxide changes everything. When a chlorine dioxide ion comes in contact with a pathogenic organism, it immediately attracts up to five electrons from that organism, in what can be called a microscopic explosion. Harmless for us, but terminal for the pathogenic cell..."
"...When chlorine dioxide kicks in, electron-deprived pathogens cease to exist.

(excerpts taken in full from the consulted publications)

Table 7. Alerts on MMS risks, Rio de Janeiro, 2019

"...Like many misleading healthcare products, MMS promises amazing benefits, which include autism cures, cancer cures. But none of these claims are true. Always be suspicious of products considered miraculous in the health area..."
"...The truth is that MMS is a dangerous poison and as such it does not have any business in the alternative health arena..."
"…Even if we're told that nausea and diarrhea are positive signs of detox when following the MMS protocol, you can be sure they're, in fact, how our bodies tell us we've just been poisoned. If you happen to vomit, make sure he saved your life by avoiding a lethal MMS overdose!
In fact, there are several testimonials of negative side effects and at least one MMS-related death that you can easily find on the internet..."
"...A supposed drug against autism has been worrying parents and the entire medical society. The so-called MMS (abbreviation for "miracle mineral solution"), a chlorine dioxide solution, can pose several health risks.
Although banned by Anvisa (National Health Surveillance Agency) since June 2018, the product can still be easily found in physical stores and through internet advertisements…"
"But to discredit the serious scientific evidence, the MMS propagators have used the argument of the 'great global conspiracy of the pharmaceutical industry...'
"...Receiving a child's diagnosis of autism is not easy. We never feel as powerless as we did at that moment. That's when someone comes up saying 'hey, there's something you can do to cure your child.' You WANT to believe. believe. Even if that doesn't seem to make much sense. And so many parents end up choosing to try things like MMS..."

(excerpts taken in full from the consulted publications)

Some cite the use of the product by public or high-income people, suggesting privileged access to information about MMS and associating its use with health for life, the absence of illness among these people or even discrediting other available treatments. It is equally important to note that the justifications for the use and the explanations presented for the way the product acts against ASD usually contradict what scientific knowledge points out (Table 6), including the claim of safety and minimization of associated risks. the use of MMS. Among the websites that alert the population about the risks of using this product, several of the claims mentioned above are confronted (Table 7). Sites of parents' associations, health professionals, journalists, among others, present warnings about the risks for users, the lack of proof of action and the profits involved in promoting this product, among other aspects.

DISCUSSION

In Brazil, although there is still difficulty in accessing health services, important achievements in public policies in favor of people with ASD have been observed, with emphasis on the creation of the Psychosocial Care Network (RAPS) (Rossi et al., 2018). The Ministry of Health emphasizes that the therapeutic project for people with ASD must be unique, built with the family and the person themselves, involve a multidisciplinary team and be open to proposals that allow them to improve their quality of life (Brasil, 2015). Smith et al. (2020) showed that parents of children with ASD cite the internet as one of the main sources of information used, indicating that they spend considerable time browsing the web. Sook et al. (2019) studied the impact of this search on the acceptance of the ASD diagnosis, noting that parents exposed to contradictory information about the autism spectrum tended to be reluctant to accept their clinician's opinion and to seek a second opinion. Those who were exposed to quality technical information were shown to accept the diagnosis better, seeking a second opinion in fewer cases. For the authors, physicians need to be aware of the influence of information on the internet on parents' trust in their children's treatment. Dias et al. (2019) also point out the influence of information made available on the internet on the opinion formation of parents and relatives of individuals with ASD. The authors emphasize, however, that part of this information spreads without a scientific basis, which can have serious consequences for the health of these individuals. The results found in this work are following the perception of Dias et al. (2019) and are worrisome, given the pseudoscience pointed out as the basis for the indication of the use of MMS in the treatment of autism, an aspect also observed by Milaré et al. (2018). It is important to emphasize that, although the accuracy of the information is very poor among the sites that indicate the use of MMS, its readability and interactivity were considered good or fair in 58.6% and 72.4% of the sites, respectively. This implies that the websites have good usability, but problems in the quality of the text they convey, which can enhance the induction of an unsafe practice for the users' health. One of the aspects conveyed is the possibility of curing autism, which contradicts the literature (Medavarapu et al., 2019). This claim takes advantage of moments of fragility and expectations of parents and caregivers. Equally worrying are the messages that instill in the reader distrust in health professionals, health agencies and the pharmaceutical industry, even encouraging users to omit the use of the product from their physicians. This may expose the user to more risk as it may make it difficult or delay to identify the adverse effects of the product. This strategy was also observed by Milaré et al. (2020), in a study on information on the Internet about MMS. The development of disbelief in science and educational and research institutions from the dissemination of false news on the internet was also pointed out by Galhardi et al. (2020), which may impact the population's adherence to health measures necessary for individual and collective protection. In addition to this strategy, the suggestion that patients do not discuss the option of using MMS with their physicians, reinforcing the risk to which such patients are exposed.

This aspect was observed by Kyriacou and Sherratt (2019) when studying the behavior of patients seen by endocrinologists. The authors observed that the majority (56.1%) of the patients sought information on the internet and that 77.1% considered the information highly reliable, 25.7% discussed it with their endocrinologists. The product's innocuous claim is another incorrect and dangerous information, contrary to the literature (Loh et al., 2014; Zhen and Hakmeh, 2020) and several alerts issued by health agencies such as ANVISA (Brazil, 2018, Brazil, 2019) and the FDA (NewsCAP, 2019). In this scenario, publications that alert to the risks of using MMS, as well as the lack of support for the claims of its curative properties in various health situations, including the ASD, become even more relevant. The results show that, with regard to the use of MMS for ASD, these publications were intensified after the broadcast of a report on the national TV network, suggesting the response of the scientific community and the press to offer good quality information to patients and their family members, thus supporting more rational decisions about this product. A similar situation was observed with the case reports and warnings issued by parents' associations

regarding the use of MMS. It is noteworthy that the information obtained on the internet plays a prominent role as a tool for accessing health programs in ASD (Rossi et al., 2018, Sehlin et al., 2018) and as a space for sharing experiences and discussing common interests (Dias et al., 2019), making the availability of quality information essential to support more rational health decisions. Drug and toxicological information centers also participated in this process, disclosing the risks of using the product (ABRACIT, 2020; RACIM, 2020). All these initiatives reinforce the importance of health professionals being involved in the dissemination of free, up-to-date and good quality information about health products, in a language accessible to society. This aspect was pointed out by Pagoto et al. (2019) when considering the positive and negative aspects of the use of social media in health. The authors concluded that a research agenda on the subject from the perspective of public health is urgent.

CONCLUSION

This work showed that the information made available on the internet about the MMS product has serious quality problems, with unfounded claims about the use of this product for the treatment and cure of ASD. However, it also allowed for the identification of a movement towards the provision of counter-information on the part of journalistic websites, health professionals and support groups for patients with ASD based on the signaling, in television media, of the problem. It is noteworthy that Brazil has a network of drug information centers and services (REBRACIM) that have the possibility of intensifying the availability of alerts and free, current and scientifically referenced information for the population, an important element to promote the rational use of technologies in health.

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