



Disponible en ligne sur

ScienceDirect
www.sciencedirect.com

Elsevier Masson France

EM|consulte
www.em-consulte.com

**Médecine et
maladies infectieuses**

Médecine et maladies infectieuses xxx (2017) xxx–xxx

Original article

Vaccine criticism: Presence and arguments on French-speaking websites

Discours critiques vis-à-vis de la vaccination : présence et argumentations sur le web francophone

A. Nugier, F. Limousi, N. Lydié*

Santé publique France, direction de la prévention-promotion de la santé, 12, rue du Val-d'Osne, 94415 Saint-Maurice cedex, France

Received 26 July 2016; received in revised form 18 October 2016; accepted 4 September 2017

Abstract

Objective. – To evaluate the presence of vaccine criticism on the French Web and to analyze strategies and arguments used by opponents of vaccination.

Methods. – The most frequently used keywords associated with the terms “vaccination” and “vaccine” on Google.fr in September 2013 were identified and searched for individually on Google.fr. The links presented in the first three pages of results were reviewed to identify the most frequent providers of information. The proportion of critical content was determined by website type and a content analysis was performed.

Results. – The main preoccupations about vaccination were general concerns; < 1% of searches were guided by negative keywords. Institutional websites, healthcare websites, news websites and anti-vaccine websites were the most frequent providers of results. The proportion of anti-vaccine websites among the results was 11% for a neutral search and 24% for a search guided by negative keywords. Critical content was observed in other types of website. Six major strategies and categories of arguments used by opponents of vaccination were identified: the manipulation of science, the use of shocking images and an appeal to emotions via testimonies, a general vaccination conspiracy, the individual's freedom of choice not respected, an unnatural act and a negative benefit/risk balance.

Conclusion. – It seems important to monitor online vaccination debates, to develop an institutional presence that meets the needs of Internet users and to help them develop a critical view.

© 2017 Elsevier Masson SAS. All rights reserved.

Keywords: Internet; Vaccine hesitancy; Vaccination

Résumé

Objectifs. – Évaluer la présence en ligne des discours critiques vis-à-vis de la vaccination et identifier les ressorts employés.

Méthodes. – Les mots clés associés aux termes « vaccination » et « vaccin » les plus utilisés sur Google.fr en septembre 2013 ont été identifiés, puis ont fait l'objet de requêtes. Les liens des trois premières pages de résultats ont été explorés afin d'identifier les principaux émetteurs de résultats. La proportion de contenu critique a été mesurée pour chaque catégorie de sites et une analyse qualitative des contenus a été réalisée.

Résultats. – Les principales préoccupations des internautes concernaient la vaccination en général, moins de 1 % de ces recherches étaient « orientées » par des mots-clés négatifs. Les principaux émetteurs étaient les sites institutionnels, les sites santé, les sites d'information et les sites antivaccinaux. La proportion de sites antivaccinaux dans les résultats était de 11 % lors d'une recherche neutre et 24 % lors d'une recherche « orientée ». Des propos critiques étaient également retrouvés dans les autres catégories de site. Six grands domaines rhétoriques et grands thèmes en défaveur de la vaccination ont été identifiés : une instrumentalisation de la science, une utilisation du registre émotionnel, une conspiration vaccinale généralisée, un acte contre-nature, une balance bénéfices/risques négative et une liberté de choix non respectée.

Conclusion. – Il paraît important d'assurer une veille des discours sur la vaccination en ligne, de développer une présence institutionnelle adaptée aux besoins des internautes et de les aider à développer une vision critique.

© 2017 Elsevier Masson SAS. Tous droits réservés.

Mots clés : Hésitation vaccinale ; Internet ; Vaccination

* Corresponding author.

E-mail address: nathalie.lydie@santepubliquefrance.fr (N. Lydié).

1. Introduction

People have been reluctant about vaccination since the 1990s. The measles/mumps/rubella vaccine has wrongly been accused of causing autism or Crohn's disease [1] and the hepatitis B vaccine has been suspected, although never confirmed, to be linked with demyelinating diseases [2]. More recently, vaccination campaigns against influenza A(H1N1) did not mobilize public support [3]. Vaccine hesitancy has a negative impact on the vaccination coverage, which is still insufficient for some vaccines among specific population categories [4].

In 2016, 16% of Internet users had searched for online information on vaccination [5]. On the Web 2.0, characterized by an active participation of Internet users, discussion forums have become a major source of information on vaccination as they provide access to opinions and enable people to share their own point of view [6]. Although a minority, opponents of vaccination are extremely active on forums and the amount of comments shared by this minority of people is disproportionate compared to their actual number [7,8]. Yet, online information on vaccination influences knowledge, behaviors and decisions of Internet users [6,9–11]. Consulting websites and blogs critical of vaccination increases the perceived risks of vaccines and reduces the likelihood of getting vaccinated [6,9]. Discussion forums and other media such as videos, social networks and interactive sites could therefore play an educational role. They could explain decisions about vaccination in an idea-enabling environment [12]. Institutions are increasingly developing new communication strategies using this type of media to communicate about vaccination. However, better knowledge of communication channels and of vaccine depiction on the Internet is required to tailor these strategies for vaccine-reluctant people [13].

Several authors reviewed content on vaccination as a whole [5,14,15] or through a specific vaccine-preventable disease [8,11,16–19] published on the Internet [5,14,15,19] or more specifically on forums [18,20], article comments [8] or YouTube [16]. To our knowledge, only one study has assessed French anti-vaccine online content using a keyword search [21]. This study did not review the online content of non-specialized websites or social networks, which are also likely to have critical opinions on vaccination. Our aim was to assess access to anti-vaccine content on French-speaking websites and to analyze strategies and arguments used by opponents of vaccination.

2. Methods

The most frequent keywords associated with “vaccination” and “vaccine” used on Google.fr in September 2013 were identified using the online advertising service Google AdWords. We only kept keywords that had been used more than 100 times in September 2013 and that were related to vaccinations included in the French vaccination calendar, i.e. tuberculosis, diphtheria, tetanus, poliomyelitis (DTpolio), pertussis, *Haemophilus influenzae* type b, hepatitis B, *Streptococcus pneumoniae*, meningitis C, measles/mumps/rubella (MMR), papillomavirus and influenza. Keywords relating to animal vaccinations, developing country-specific vaccinations,

or vaccinations for travellers as well as factual searches such as “vaccination center” or “vaccination Pasteur” were excluded from the analysis. A total of 109 keywords were identified. Keywords were classified as “neutral” when they were not associated with any position statement on vaccination or as “topic-oriented” when suspicious about vaccination.

We made these same searches on Google.fr between September 30 and October 18 using each identified keyword to analyze online content available to anyone looking for information on vaccination. We reviewed all links displayed on the first three result pages that were related to French-speaking websites. We excluded all those leading to a blank page (deactivated sites) and those displayed on the “news” part of the first page.

For each search, we manually counted the number of links to each site displayed in the first three result pages. We searched for negative messages known to be used by anti-vaccine activists [14,22] and analyzed them in the landing pages corresponding to each link. Just like for keywords, contents were classified either as “neutral” if only displaying factual information on vaccination or as “critical” if negative information was spotted. The proportion of critical contents was assessed by site category for the main types of sites. We performed a qualitative analysis of content based on Davies et al.'s classification [22].

3. Results

3.1. Most frequent searches

A total of 99 keywords were “neutral” among the 109 that had led to more than 100 searches in September 2013. Three keywords were associated with more than 300,000 searches each: “vaccination”, “vaccine” and “vaccines”. The most frequent searches then focused on hepatitis B vaccination, compulsory vaccines, the influenza vaccine, the DTpolio vaccine and on vaccines for infants and young children (Table 1).

Only 10 keywords were considered “topic-oriented”; they accounted for 0.1% of all searches. Seven referred to adverse effects of vaccines, either as a whole (“adverse effects vaccines”) or more specifically (“adverse effects influenza”, “MMR”, “meningitis”, “tetanus”). The three other keywords were “silence on vaccine” (390 searches) – the title of a documentary broadcasted in France in 2008 that was extremely critical of vaccination –, “adjuvants” (320 searches) and “macrophagic myofasciitis” (170 searches).

3.2. Search results

Taking into consideration the first three result pages generated by each search, searches made by the investigators using the 109 keywords retrieved 3209 links. The analysis of these links led to the identification of 174 sites which number of occurrences ranged from 1 to 158. The main providers of information were institutional websites (29% of the links), healthcare websites (25%), news websites (14%), anti-vaccine websites (11%), parenting websites (9%), encyclopedias (4%), women's sites (3%) and social media (2%) (Table 2, Fig. 1). The institutional site

متن کامل مقاله

دریافت فوری ←

ISIArticles

مرجع مقالات تخصصی ایران

- ✓ امکان دانلود نسخه تمام متن مقالات انگلیسی
- ✓ امکان دانلود نسخه ترجمه شده مقالات
- ✓ پذیرش سفارش ترجمه تخصصی
- ✓ امکان جستجو در آرشیو جامعی از صدها موضوع و هزاران مقاله
- ✓ امکان دانلود رایگان ۲ صفحه اول هر مقاله
- ✓ امکان پرداخت اینترنتی با کلیه کارت های عضو شتاب
- ✓ دانلود فوری مقاله پس از پرداخت آنلاین
- ✓ پشتیبانی کامل خرید با بهره مندی از سیستم هوشمند رهگیری سفارشات