Profile of the Users and the Most Visited Topics of a Pediatric eHealth Website

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Abstract: Parents need information about their children’s health, and the Internet has become an essential repository for this information. However, there is almost no information about which topics are the most searched, consulted, or shared, or about the main characteristics of pediatric website users. The main aim of this research was to describe the profile of the users of a pediatric website, which topics they searched for, which topics were the most consulted, and which were the most shared. Users’ demographic data were analyzed regarding their use of the Internet to search for information about health. A pediatric website for parents was analyzed. A 26-item questionnaire collected demographical features of the users of the website. Descriptive and analytical analyses were performed. Most participants used general search engines for their health searches, and the most searched keywords were prurigo, barking cough, and laryngitis. The most visited topics were unexplained fever, snots, and laryngitis. The most shared were snots, lipotomy, and dizziness. The users were mainly women (67.8%), with an average age of 38.8 years, and one or two children (89%) with a mean age of 4.6 years. The users who mainly used the Internet for health purposes were women of younger age, and with a higher educational level.

Keywords: eHealth; mHealth; telemedicine; pediatrics; users; profile

1. Introduction

The interest of users in the Internet as a tool for seeking health-related information is growing [1]. Parents need information about their children’s health, and the Internet is a growing resource from which to obtain this information [2]. For this reason, parents are increasingly accessing the web in search of information on health [3,4]. However, there are no references about the main characteristics of these users and how they may affect the use of health portals [5].

According to the literature, women use the Internet more than men in regard to health [3,6–10], and they also participate more in studies on eHealth interventions [11]. Young adults seem to perform more health searches on the Internet [3,7–9,12,13] due to their higher digital skills [14]. More educated users use the Internet more in regard to health [7,9,12,13,15,16], as do people with higher incomes [13,17,18]. Geographically, according to some authors, users who live in urban areas perform more health searches on the Internet [11], while others point out that this would be the case for those who live further away from medical services [15].

In the pediatric setting, the likelihood of performing health searches on the Internet could be related to the number of visits to a pediatrician [3,15]. These health searches occur even before a visit to a doctor [4]. Although little is known about how they are
performed [19,20], there does seem to be a consensus in the literature that most parents use general search engines, such as Google, to perform searches on their children’s health [3,18,21–26]. Only 1% of the users use social media such as Facebook [3], although their use is increasing [14,23,27]. Parents of children with serious diseases are more active searchers [4,6], as are those of children with chronic diseases [6,16,28,29], although some authors have found no differences in the latter group [30]. However, there is no scientific literature on what parents are searching for when they arrive at a pediatric website, the topics they consult most on these websites, and how they share them.

Therefore, the main objective of this study was to describe the profile of the users of a pediatric website, written in an easy language and with a simple interface, and to find out what topics they searched for to access the website, what topics they consulted within the website, and what topics they shared with other users. In addition, the users’ demographic data were analyzed in regard to their use of the Internet to search for health topics.

2. Materials and Methods

For the study, we used a pediatric website for parents, written in Spanish, open access and free, where 338 pediatric topics with information based on scientific evidence about symptoms, diseases, and care of a healthy child, written in simple language by a pediatrician, could be located and consulted. The website was available at https://notodoespedia.com (accessed on 2 October 2021), and it was developed using the free web hosting service WordPress.com (Automattic Inc., San Francisco, CA, USA). The main objective of the website was to allow parents to access evidence-based pediatric information, and it was certified by the Health on the Net Foundation. The interface of the website was designed to be easily usable by any kind of user. The background was white, the text black, and the images used were simple drawings with soft colors. The different sections of the website were accessible from a menu located at the head of the home page. On the right, a search engine allowed users to find any term within the website. When this research was performed, the website had been working for five years and six months.

Data on visits, visitors, most visited topics, search keywords, most shared topics, and shared topics were obtained from the WordPress servers. The two units of measurement for website traffic were visits and unique visitors: visits were counted when a visitor loaded a page, and unique visitors were counted when a user was detected for the first time in a specific period.

A 26-item questionnaire was designed to obtain a demographic profile of the website users (Table 1). No personal data were collected that would allow for the identification of participants. The questionnaire was developed using Google Forms (Google L.L.C., Mountain View, CA, USA) and remained active for website visitors for eight weeks. An informed consent form was displayed on the first page of the questionnaire, informing participants about the conditions of the study, its objectives, that the questionnaire was anonymous and therefore did not collect personal data, and that participants could leave the questionnaire at any time. No economic incentives were offered.

To perform univariate analysis, central tendencies and dispersion measurements were calculated for quantitative variables; absolute and relative frequencies were used for qualitative variables. The Kolmogorov–Smirnoff test was applied to establish the goodness of fit to normality for the variables studied, to determine the use of parametric or non-parametric tests. For means and proportions, 95% confidence intervals (CIs) were calculated. To perform bivariate analysis, the non-parametric Mann–Whitney U test was used for the contrast of the hypothesis of the equality of quantitative variables; for qualitative ones, the Pearson chi-squared test was used; and for the correlation of quantitative variables, Spearman’s rho was used. The statistical analyses were performed using S.P.S.S. version 26 (I.B.M. Inc., Armonk, NY, USA).
Table 1. Demographical data collected.

| About User’s Profile                  |
|---------------------------------------|
| Gender                                |
| Age                                   |
| Level of study                        |
| Income level                          |
| Country of residence                  |
| Urban or rural world                  |

| About Their Children                  |
|---------------------------------------|
| Number of children                    |
| Age of their youngest child           |
| Children with chronic illnesses       |
| Children with severe illnesses        |
| Number of pediatrician appointments within the last year |

| Internet Use about Health             |
|---------------------------------------|
| The device usually used to access the Internet |
| If they had access to the Internet via their mobile phone |
| How often they accessed the Internet   |
| If the Internet was used to perform searches about health |
| If the Internet had influenced a decision to go to the doctor |
| If the Internet had influenced a decision to go to a pediatrician |
| Frequency of health-related searches on the Internet |
| How much they relied on the Internet for their health |
| How much they relied on the Internet for their children’s health |
| If they felt capable of finding information about children’s health on the Internet |

| About Access to the Pediatric Website |
|---------------------------------------|
| How they knew about the website       |
| How they accessed the website         |
| How long they had known about the website |
| How many times they had consulted the website |
| What they were searching for the first time they accessed the website |

All the procedures described in this study were approved by the Human Research and Bioethics Committee of the University of Almería (Spain), reference number UAL-BIO2020/023.

3. Results

This section may be divided by subheadings. It should provide a concise and precise description of the experimental results, their interpretation, as well as the experimental conclusions that can be drawn.

3.1. Most Visited Topics, Most Used Keywords, and Most Shared Topics

At the time of data collection for this study, the website had been working over five years and six months, and it had received 2,909,785 visits, made by 2,432,167 unique visitors. The 25 most visited topics during are shown in Table 2. These 25 topics constituted 70.5% of the total number of visits (n = 2,052,102). The most visited topics were unexplained fever, snots, and laryngitis. The least visited topics, of the 338 posted on the website, were: alcohol intake in adolescents (n = 22), compulsive intake in children (n = 16), and suicide attempts in children and adolescents (n = 15).

WordPress detected 43,559 terms, words, and phrases users used in general search engines, such as Google, to access entries and pages of the website. The 25 most used keywords are shown in Table 3 and constituted 37.2% (n = 16,215) of the keywords used to access the website. The most frequently used were prurigo (used 3735 times), kennel cough (1848 times), and laryngitis (1296 times). Some search engines did not disclose search terms
for privacy reasons, so they were shown as unknown search terms when search terms were not known. The total number of unknown search terms was 1,774,427.

Table 2. Twenty-five most visited topics of the website.

| Twenty-Five Most Visited Topics of the Website | n   | %    |
|-----------------------------------------------|-----|------|
| Fever for no apparent reason                  | 330,466 | 10.4 |
| Snots in children                              | 283,590 | 9.8  |
| Laryngitis (barking cough)                    | 252,520 | 8.7  |
| Presence of blood in stool (rectorrhagia)      | 181,319 | 6.2  |
| Syncope, lightheadedness, dizziness, or fainting | 146,912 | 5.1  |
| Children who poop without meaning to (encopresis) | 111,338 | 3.8  |
| Swollen lymph nodes or lymph nodes             | 94,110 | 3.2  |
| Prurigo (skin lesions or papules)              | 89,004 | 3.1  |
| Cephalohematoma and caput succedaneum         | 48,270 | 1.7  |
| Umbilical cord infection (omphalitis)         | 47,769 | 1.6  |
| Dizziness and vertigo in children             | 42,321 | 1.5  |
| Dental caries                                  | 41,613 | 1.4  |
| Bleach or caustic poisoning                    | 40,675 | 1.4  |
| Parasitic infections in children               | 40,653 | 1.4  |
| Infant colic                                   | 37,354 | 1.3  |
| Facial paralysis in children                   | 30,354 | 1.0  |
| Large head (macrocephaly)                     | 30,235 | 1.0  |
| Fever                                         | 28,875 | 0.9  |
| Constipation                                   | 27,664 | 0.9  |
| Diarrhea or acute gastroenteritis             | 27,061 | 0.9  |
| Aphthous ulcers ( stomatitis, mouth sores, or ulcers) | 25,913 | 0.8  |
| Anemia of infancy (or physiological anemia of lactation) | 24,333 | 0.8  |
| Enlargement of the spleen (splenomegaly) in children | 24,307 | 0.8  |
| Normal psychomotor development in 6 to 11 years old children | 22,962 | 0.8  |
| Ibuprofen poisoning in children                | 22,480 | 0.7  |
| Total                                         | 2,052,102 | 70.5 |

Table 3. Most used keywords in general search engines.

| Most Used Keywords in General Search Engines | n   | %    |
|----------------------------------------------|-----|------|
| Prurigo                                      | 3735 | 8.6  |
| Barking cough                                | 1848 | 4.2  |
| Laryngitis in children                       | 1296 | 2.9  |
| Fever in children with no apparent cause     | 1092 | 2.5  |
| Macrocephaly                                 | 883  | 2.0  |
| Cephalohematoma                              | 849  | 1.9  |
| Kennel cough in children                     | 687  | 1.6  |
| Fever without symptoms                       | 663  | 1.5  |
| Childhood laryngitis                         | 463  | 1.1  |
| Thelarche                                    | 438  | 1.0  |
| Fever in children without symptoms           | 434  | 1.0  |
| Laryngitis                                   | 421  | 0.9  |
| Omphalitis                                   | 352  | 0.8  |
| Fever without symptoms in children           | 328  | 0.7  |
| Kennel cough in children                     | 320  | 0.7  |
| Fainting in children                         | 305  | 0.7  |
| Laryngitis in infants                        | 240  | 0.6  |
| Fever with no apparent cause                 | 240  | 0.6  |
| Bloody stools in children                    | 239  | 0.6  |
| Fever without apparent cause in children     | 228  | 0.5  |
| Gibbering                                    | 226  | 0.5  |
| Dizziness in children                        | 222  | 0.5  |
| Snotty throat, baby                          | 220  | 0.5  |
| Lipotomy in children                         | 210  | 0.5  |
| Pediatrics                                   | 210  | 0.5  |
| Total                                        | 16,215 | 37.2 |

Some of the topics of the website were shared, via the links available on the WordPress platform itself, a total of 2949 times. The most used social media were Facebook (1688 topics
shared) and Twitter (1259 topics shared). The most shared topics are shown in Table 4. These include snots in children (shared 124 times), syncope, lipotony and dizziness (shared 97 times), and laryngitis (shared 86 times).

| Most Shared Topics from the Website | n   | %   |
|------------------------------------|-----|-----|
| Snots in children                  | 124 | 4.2 |
| Syncope, lightheadedness, dizziess, or fainting in children | 97  | 3.3 |
| Laryngitis (barking or hoarse cough) | 86  | 2.9 |
| Fever for no apparent reason       | 69  | 2.3 |
| Infant colic                       | 45  | 1.5 |
| Limping in infancy                 | 42  | 1.4 |
| Children who poop without meaning to (encopresis) | 41  | 1.4 |
| Pharyngitis, tonsililitis, and pharyngotonsililitis | 39  | 1.3 |
| Prurigo (skin lesions or papules)  | 35  | 1.2 |
| All about Bexsero, the vaccine against meningitis | 32  | 1.1 |
| Hallucinations in children (phobic hallucinations) | 32  | 1.1 |
| Swollen lymph nodes or lymph nodes  | 32  | 1.1 |
| Food allergies in children         | 31  | 1.1 |
| Inflammation of the gums (gingivitis) | 30  | 1.0 |
| Homepage                           | 30  | 1.0 |
| Large head (macrocephaly)          | 27  | 0.9 |
| Presence of blood in stool (rectorrhagia) | 25  | 0.8 |
| Constipation                       | 24  | 0.8 |
| Aphthous ulcers (stomatitis or mouth ulcers) | 23  | 0.8 |
| Umbilical cord infection (omphalitis) | 23  | 0.8 |
| Sleep in children                  | 22  | 0.8 |
| Coffee-with-milk spots on the skin in children | 20  | 0.7 |
| Premature thelarche (breast development) | 20  | 0.7 |
| Children who do not eat properly   | 20  | 0.7 |
| Bleach (caustic) poisoning         | 19  | 0.6 |
| Total                              | 2949| 33.5|

### 3.2. Demographical Aspects of the Survey Participants

During the eight weeks that the questionnaire was available, the website received 117,032 visits from 98,577 unique visitors, of which 0.52% (n = 516) participated in the study by completing 516 valid questionnaires. Their main demographical features are shown in Table 5. The mean age of the participants of the study was 38.8 years, with a standard deviation (S.D.) of 6.1 years; 67.8% (n = 350) were women; 73.8% (n = 381) had university or higher education; 65.6% (n = 339) reported a household income of over 26,000 euros per year; 92.2% (n = 476) resided in Spain; and 78.1% (n = 403) lived in urban areas.

| Distribution by Age | Mean | S.D. |
|---------------------|------|------|
|                     | 38.8 | 6.1  |

| Distribution by Sex | n   | %   |
|---------------------|-----|-----|
| Female              | 350 | 67.8|
| Male                | 166 | 32.2|

| Distribution by the Level of Study | n   | %   |
|------------------------------------|-----|-----|
| Masters or postgraduate degree     | 128 | 24.8|
| University studies                 | 253 | 49.0|
| Secondary school or baccalaureate  | 92  | 17.8|
| Primary or school graduate         | 20  | 3.9 |
| Others                             | 23  | 4.5 |
Table 5. Cont.

| Distribution by Income Level | n  | %  |
|-----------------------------|----|----|
| More than EUR 75,000/year   | 57 | 11.0 |
| Between EUR 51,000 and 75,000/year | 92  | 17.8 |
| Between EUR 26,000 and 50,000/year | 190 | 36.8 |
| Between EUR 11,000 and 25,000/year | 133 | 25.8 |
| Less than EUR 10,000/year    | 44 | 8.5  |

| Distribution by Place of Residence | n  | %  |
|-----------------------------------|----|----|
| Spain                             | 476| 92.2 |
| Central/South America             | 24 | 4.7  |
| North America                     | 12 | 2.3  |
| Another European country          | 3  | 0.6  |
| Africa                            | 1  | 0.2  |

| Distribution by Geographical Area | n  | %  |
|----------------------------------|----|----|
| Urban                            | 403| 78.1 |
| Rural                            | 113| 21.9 |

Total Number of Participants 516 100

3.3. Demographic Aspects of Participants’ Children

The demographic features of their children are shown in Table 6. A total of 89% of the study participants (n = 459) had one or two children; 14.5% (n = 75) had children with chronic diseases; and 3.9% (n = 20) had children with serious diseases. Regarding the frequency with which they visited a pediatrician, 52.5% of the participants (n = 271) reported visiting a pediatrician three or fewer times a year; 47.4% of participants (n = 154) reported visiting a pediatrician between four and seven times a year; and 17.6% of participants (n = 91) reported visiting a pediatrician more than eight times a year.

Table 6. Demographic data of participants’ children.

| Distribution by Age | Mean | S.D. |
|---------------------|------|------|
|                     | 4.6  | 4.0  |

| Distribution by the Number of Children | n  | %  |
|----------------------------------------|----|----|
| One                                    | 182| 35.3 |
| Two                                    | 277| 53.7 |
| Three or more                          | 39 | 7.6  |
| None                                   | 18 | 3.5  |

| Children with Chronic Illnesses | n  | %  |
|---------------------------------|----|----|
| Yes                             | 75 | 14.5 |
| No                              | 409| 79.3 |
| It is under study               | 32 | 6.2  |

| Children with Serious Illnesses  | n  | %  |
|----------------------------------|----|----|
| Yes                              | 20 | 3.9  |
| No                               | 490| 95.0 |
| It is under study                | 6  | 1.2  |

| Frequency of Pediatric Visits    | n  | %  |
|----------------------------------|----|----|
| Between 0 and 1 time a year     | 125| 24.2 |
| Between 2 and 3 times a year    | 146| 28.3 |
| Between 4 and 7 times a year    | 154| 29.8 |
| Between 8 and 10 times a year   | 62 | 12.0 |
| More than 10 times a year       | 29 | 5.6  |

Total Number of Participants 516 100

3.4. Use of the Internet for Health Aspects

Regarding the use of the Internet for health aspects (Table 7), a total of 98.4% of the participants (n = 508) had access to the Internet on their smartphones, and 53.3% (n = 275)
regularly accessed the Internet using that device. A total of 95.3% of the participants (n = 492) accessed the Internet several times a day, and 94.2% of the participants (n = 486) used the Internet for health searches. A total of 81.8% of the participants (n = 422) used general search engines for these searches; 72% of the participants (n = 371) relied on the Internet for health issues related to them; 65% (n = 335) relied on the Internet for health searches related to their children; and 86.1% of the participants (n = 444) reported that they could find information about children’s health on the Internet. A total of 50.4% of the participants (n = 260) reported that the information found on the Internet had never influenced their decision to visit a doctor, and 41.5% (n = 214) reported that it had influenced their decision to visit a pediatrician.

Table 7. Use of the Internet for health aspects.

| Device Usually Used to Access the Internet | N   | %   |
|------------------------------------------|-----|-----|
| Smartphone                               | 275 | 53.3|
| Computer                                 | 52  | 10.1|
| Tablet                                   | 20  | 3.9 |
| Indistinct                               | 169 | 32.8|

| You Have Access to the Internet on Your Mobile Phone | N   | %   |
|-----------------------------------------------------|-----|-----|
| Yes                                                 | 508 | 98.4|
| No                                                  | 8   | 1.6 |

| The Frequency You Usually Access the Internet        | N   | %   |
|-----------------------------------------------------|-----|-----|
| Several times a day                                  | 492 | 95.3|
| Once a day, or less                                  | 24  | 4.7 |

| Use of the Internet to Perform Health Searches      | N   | %   |
|-----------------------------------------------------|-----|-----|
| Yes                                                 | 486 | 94.2|
| No                                                  | 30  | 5.8 |

| How Health Information Is Searched on the Internet | N   | %   |
|-----------------------------------------------------|-----|-----|
| Use of general search engines, such as Google       | 422 | 81.8|
| I access directly the websites I want to consult    | 84  | 16.3|
| Other ways (Facebook pages, online forums, etc.)    | 10  | 1.9 |

| Confidence on the Internet to Consult about Their Health | N   | %   |
|----------------------------------------------------------|-----|-----|
| A lot                                                    | 7   | 1.4 |
| Quite a lot                                             | 99  | 19.2|
| Something                                                | 265 | 51.4|
| Little                                                   | 133 | 25.8|
| Nothing                                                  | 12  | 2.3 |

| Confidence on the Internet to Consult about Their Children's Health | N   | %   |
|---------------------------------------------------------------------|-----|-----|
| A lot                                                               | 7   | 1.4 |
| Quite a lot                                                         | 80  | 15.5|
| Something                                                           | 248 | 48.1|
| Little                                                              | 150 | 29.1|
| Nothing                                                             | 31  | 6.0 |

| The Extent to Which the Users Considered Themselves Capable to Find Information about Children's Health on the Internet | N   | %   |
|----------------------------------------------------------------------------------------------------------------|-----|-----|
| Highly skilled                                                    | 63  | 12.2|
| Quite capable                                                      | 199 | 38.6|
| Somewhat capable                                                   | 182 | 35.3|
| Poorly trained                                                     | 66  | 12.8|
| Not trained at all                                                 | 6   | 1.2 |
Table 7. Cont.

| The Health Searches Have Influenced Whether to See a Doctor | N | %  |
|------------------------------------------------------------|---|----|
| Yes                                                        | 260 | 50.4 |
| No                                                         | 230 | 44.6 |
| I do not know                                              | 26  | 5.0  |

| The Health Searches Have Influenced Whether to See a Pediatrician | N | %  |
|-----------------------------------------------------------------|---|----|
| Yes                                                             | 214 | 41.5 |
| No                                                              | 260 | 50.4 |
| I do not know                                                   | 42  | 8.1  |

Total Number of Participants 516 100

3.5. Use of the Analyzed Website

Regarding the data related to the specific use of the website (Table 8), a total of 45.5% of the participants (n = 235) knew about the website through social networks, and 54.7% of the participants (n = 282) accessed it using their smartphone. A total of 51.6% of the participants (n = 266) had known about it for more than a year, and 80.4% (n = 415) had accessed it between one and ten times. A total of 25.8% of the participants (n = 133) stated that they were searching for information, before visiting a pediatrician, when they accessed the website for the first time.

Table 8. Data related to the use of the analyzed website.

| How the Website Was Found | n | %  |
|---------------------------|---|----|
| Through search engines    | 61 | 11.8 |
| Through social networks   | 235 | 45.5 |
| Recommendation through a message | 60 | 11.6 |
| By verbal recommendation in a non-health environment | 56 | 10.9 |
| Verbal recommendation from a health professional | 47 | 9.1 |
| By two or more of these ways | 45 | 8.7 |
| None of these ways         | 12  | 2.3  |

| Which Device Was Used to Access the Website | n | %  |
|--------------------------------------------|---|----|
| A smartphone                                | 282 | 54.7 |
| Computer                                    | 83  | 16.1 |
| Tablet                                      | 21  | 4.1  |
| Indistinct                                  | 130 | 25.2 |

| How Long the Website Was Known | n | %  |
|---------------------------------|---|----|
| More than one year              | 266 | 51.6 |
| Between 1 and 12 months         | 68  | 13.2 |
| Less than a month               | 182 | 35.3 |

| How Many Times the Website Had Been Visited | n | %  |
|---------------------------------------------|---|----|
| Between 1 and 5 times                       | 288 | 55.8 |
| Between 5 and 10 times                      | 127 | 24.6 |
| Between 10 and 20 times                     | 61  | 11.8 |
| More than 20 times                          | 40  | 7.8  |

| What the User Was Searching for the First Time the Website Was Accessed | n | %  |
|-------------------------------------------------------------------------|---|----|
| Information before a pediatrician appointment                            | 133 | 25.8 |
| Expand on information given by a physician or pediatrician              | 109 | 21.1 |
| Healthy child information                                               | 70  | 13.6 |
| Information before going to the emergency room                           | 53  | 10.3 |
| Clarify something not understood in the consultation or the emergency room | 44  | 8.5  |
| Others                                                                   | 107 | 20.7 |

Total Number of Participants 516 100
3.6. Bivariate Analysis

Bivariate analysis of the data stated these following aspects: A total of 96.6% of the women in our study (n = 338) reported using the Internet for health searches, compared to 89.2% (n = 148) of the men (chi-square = 11.30; p < 0.001). The mean age of participants who reported using the Internet for health searches (38.6 years) was significantly lower than the mean age of those who did not (41.8 years) (Mann–Whitney U; p = 0.003). A total of 95.5% of participants (n = 364) with an undergraduate or graduate degree reported using the Internet for health searches, compared to 88.4% of participants (n = 99) with a primary or secondary school education (chi-square = 7.73; p = 0.005). Among the study participants, no association was found between household income level and greater use of the Internet for health searches (chi-square value, likelihood ratio = 8.6; p = 0.070). No differences were found between the use of the Internet for health searches and whether the participants lived in urban or rural areas (chi-square value, likelihood ratio = 0.038; p = 0.084).

There was a positive correlation between participants’ trust in the Internet for consulting about their own health and for consulting about their children’s health (Spearman’s rho correlation = 0.844; p < 0.001). There was no difference between using the Internet for health searches and having a child with a chronic illness (chi-square value = 0.321; p = 0.570) or with a severe illness (chi-square value, continuity correction = 0.750; p = 0.380). There were no differences in the frequency with which they visited a pediatrician and income level (Spearman’s rho correlation = −0.064; p = 0.144). No statistically significant differences were found between using the Internet to perform health searches and the number of times they visited a pediatrician (Mann–Whitney U; p = 0.111).

There was a positive and significant correlation between the degree to which the participants in the study considered themselves capable of finding information about children’s health on the Internet and their confidence to consult health issues about their children on the Internet (Spearman’s rho correlation = 0.309; p < 0.001). There was also a positive and significant correlation between the degree to which they considered themselves able to find information about children’s health on the Internet and how confident they felt when using websites similar to the one analyzed (chi-square value, likelihood ratio = 19.196; p = 0.014). Women with a higher education level reported feeling more able to find information about children’s health on the Internet than those with primary or secondary education (chi-square value, likelihood ratio = 9.11; p < 0.001).

4. Discussion

Users, and specifically parents, increasingly demand more reliable health resources on the Internet [1–4]. Nevertheless, it is not easy to develop these resources without clearly knowing the profile of the users that are going to use them. As there are few studies about this specific aspect, we decided to perform research to acknowledge the main features of users of such websites. This could help actual and future developers of eHealth websites, especially if they are focused in pediatrics. Therefore, the main objective of this study was to describe the profile of the users of a pediatric website and to find out what topics they searched for to access the website, what topics they consulted within the website, and what topics they shared with other users. The demographic users’ data were analyzed concerning their use of the Internet to search about health topics.

According to numerous authors, most parents who use the Internet as a source of health information are women [6,7,16,27,31], who also tend to participate more in studies related to the use of the Internet for health [11], findings that we have confirmed in our results. Highly educated women tend to have higher eHealth competencies [31,32], which we also found in our study. In terms of age, young users tend to be more likely to use the Internet for issues about health [7,10,12,13,18], as we have also found. However, according to other studies, most parents would be younger than 35 years old [6,9], but in our study the mean age of the participants was higher (38.8 years).

Users with a higher educational level use the Internet more to search for health information [7,9,12,13,15,16,18], especially in the pediatric field [16], and the results of
our study are concordant with this fact. On the other hand, there seems to be a positive association between having health competencies and trusting the Internet as a source of information [33]. The results of our study also seem to go in this direction.

For some authors, people with higher incomes use the Internet more concerning health aspects [13,17,18], while others have found no differences in this regard [15,30]. The results of our study are more in agreement with these latter studies. On the other hand, users who live in cities make more health searches on the Internet [11], while others point out that this would happen in those who live further away from medical services [15]. However, there are no differences in this regard [3,34], as was the case in our study.

Some authors report that users search for health information as often for themselves as for their relatives [15], while other studies describe that users tend to use the Internet more for information about others [35]. Our results agree with the first statement, as our users used and relied on the Internet for their own health and for that of their children. The likelihood of performing health searches could be related to the number of visits to a pediatrician [3,15], although there are authors that have not found such an association [28], as is the case with our results. Users with lower income levels could also consult a pediatrician more often [28]. However, we found no differences in this regard among the participants in our study.

There are no references in regard to how parents search for information [19,20]. These searches occur even before going to the doctor [4], and most users use general search engines, especially Google [3,21–26], something with which our results agree. Our study found that the terms most frequently used in general search engines to reach the analyzed website were prurigo, barking cough, and laryngitis. However, the most consulted topics on the same website were those related to fever without cause, snots, and laryngitis. Only 1% of users seem to use networks such as Facebook [3] to search about health, a figure similar to our findings. The importance of social networks is increasing however [14,23,27], which is consistent with the fact that most of the participants in the study reported having found out about the analyzed website through this medium. Indeed, Facebook was the social media most frequently used to share topics published on the website. Therefore, social media could be a good starting point to attract more users to websites such as the one analyzed. An important aspect to consider here is the use of friendly interfaces.

Parents of children with serious illnesses are more active searchers [4,6]. The same is true of parents of children with chronic diseases [6,16,26,28,29], although some authors have found no differences in the latter group [30]. In our study, we found no differences between using the Internet to perform health searches and having a child with a chronic or severe disease, although this could be related to the generalist nature of the Web. Thus, and differently to other studies on this topic, our research collected some aspects that could be important for developers when researching future pediatric eHealth resources: we found no differences among users regarding incomes, or if they lived near or far from medical services. Our users relied on the Internet for their health and the health of their children, and we found no differences, among users, regarding the number of visits to a pediatrician.

These results highlight the importance of increasing the people involved with health searches and the use of reliable pediatric eHealth resources. In our opinion, more studies are necessary to evaluate different aspects of eHealth websites from the point of view of the users. This way, we could analyze aspects such as their usability or perceived utility, among others. This research could help developers to make attractive interfaces for all kind of users. For this research, we selected some variables that could be interesting from the point of view of researchers. Our analysis allowed us to define the profile of the users of a pediatric website, highlighting features that allow us to conclude that perhaps we need to develop more usable interfaces. This way, we could attract more general users, who are less involved with technology, to access reliable scientific eHealth websites. Future research could study the potential correlation among the variables selected in this research.

The main limitation of this work is that, although the participants participated randomly, they did it voluntarily, thus generating a selection bias, which is unavoidable in
open, online surveys [36]. There are also some limitations in the statistics provided by WordPress: in regard to the terms that users used in general search engines, such as Google, to access the website analyzed, the number of unknown terms was considerable, which may lead to a bias when interpreting these data. Concerning the most shared topics, WordPress shows the number of those shared from their platform, but it is not possible to know the topics that were shared by direct copying of links. Finally, it is essential to consider that the data obtained in this study come from the analysis of a specific website. Albeit it had been functioning for more than five years, the external validity of the results and the conclusions should be considered with caution. The greatest strength of this study lies in the fact that the website had been functioning over five years and six months, and it had received 2,909,785 visits, made by 2,432,167 unique visitors, when this research was performed. Regarding the data collected through the questionnaire, the sample was 516 participants, a figure higher than that recommended by other authors for studies of this type [37,38]. Finally, it is important that the sample and the data obtained came from real users of a pediatric website, which provides considerable value to this study for potential considerations about future eHealth developments in pediatrics.

5. Conclusions

The main characteristics of the users of the analyzed website, about pediatrics for parents, were the following: users were predominantly female, with an average age of 38.8 years, most of them lived in urban areas, and had one or two children with a mean age of 4.6 years. Most accessed the Internet several times a day, mainly from their smartphones, conducted online health searches, considered themselves capable to find information about children’s health online, and relied on the Internet for health information about their children. The most visited topics were fever without cause, snots, and laryngitis. The most shared topics were snots, syncope, and laryngitis. Facebook was the social network where the topics of the analyzed website were shared the most.

The users who most frequently used the Internet to search about health were young women with a high level of education. No differences were found regarding income level, area of residence, whether they had children with chronic or severe diseases, or the frequency with which they visited a pediatrician. Although most of the participants in our study reported using general search engines to perform online health searches, prurigo, barking cough, and laryngitis being the most searched terms, most of them reported having found our website through social networks. Our results also highlight the importance of increasing the people involved with health searches and the use of reliable pediatric eHealth resources. This way, we could analyze aspects such as their usability or perceived utility, among others. These aspects could be helpful when designing an eHealth pediatric website for parents.

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Informed Consent Statement: An informed consent form was displayed on the first page of the questionnaire, informing participants about the conditions of the study, its objectives, that the questionnaire was anonymous and therefore did not collect personal data, and that participants could leave the questionnaire at any time.
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